FASB Requirements for Extensible Enumerations

Changes for 2021 Taxonomies

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The views expressed in this presentation are those of the presenter.
Official positions of the FASB are reached only after extensive due process and deliberations

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Agenda

- Summary

- Data Type Registry (DTR)

- Extensible Enumerations 2.0 (EE 2.0)

Summary

- Technical changes planned for 2021 US GAAP and SRT taxonomies
  - Implement DTR & EE 2.0

- Impact processes and software
  - Break instance documents that are not syntactically valid
  - Software developers of service providers need to be ready

Data Type Registry

Recommendation Status

- Codifies num and nonnum schemas into a single schema
  - Change of location and namespace for data types such as domainItemType, perShare, etc.
- Adds datatypes for certain GAAP Taxonomy-defined datatypes
  - Removal of datatypes from elts/us-types-2021-01-31.xsd
    - "Change" of datatypes from GAAP Taxonomy-defined datatypes to DTR
      - » gYearListItemType
      - » flowItemType
- Adds new datatype of noLangTokenItemType, base type for EE 2.0
  - Necessary for implementation

5

Data Type Registry

- Recommendation Status
  - Registry:
    - http://www.xbrl.org/dtr/2020-01-21/dtr.html
  - Schema:
    - https://www.xbrl.org/dtr/type/2020-01-21/types.xsd

- Impact to software
  - Items hard-coded in software may be impacted
  - Extension elements could utilize DTR
  - Important for technical/developer staff

Enumerations 2.0

Extensible List elements

- Introduced with the 2017 US GAAP Taxonomy
- Custom US GAAP Taxonomy data type
  - Designed to imitate REGEX pattern initially proposed in EE 2.0
    - Allow for multiple values to be reported in a fact
  - Did not include any other validation provided for in XII-defined data type
    - Facts must be a value identifying a member or members included in the domain of allowed values
- Intended to convert to EE 2.0-defined data type once specification reached Recommendation status; reached February 12, 2020

Enumerations 2.0

Recommendation Status

- Specification:
  - https://www.xbrl.org/Specification/extensible-enumerations-2.0/REC-2020-02-12/extensible-enumerations-2.0-REC-2020-02-12.html
- Schema:
  - https://www.xbrl.org/2020/extensible-enumerations-2.0.xsd
- Requirements:
  - http://www.xbrl.org/REQ/extensible-enumerations-1.1/REQ-2016-10-12/extensible-enumerations-requirements-1.1-REQ-2016-10-12.html

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Recommendation Status

- Implement with 2021 US GAAP and SRT taxonomies
  - Change the 282 elements from the SRT-defined type to the EE 2.0-defined type
  - New ones created as EE 2.0-defined type
  - Declared with @type equal to enum2:enumerationSetItemType
    » Attributes new to the Taxonomy:
      - enum2:linkrole
      - enum2:domain

Enumerations 2.0

Included TINs on the Extensible List elements

Taxonomy Implementation Note	Note	Values reported using this element should be elements available in the taxonomies used, including the extension taxonomy. An example of how the pattern for the reported value would appear, but is not necessarily a logical value, is: "us-gaap:Assets us-gaap:Liabilities". The data type on this element will change in a future Taxonomy version to enumerationsItemType, pending the Extensible Enumerations 2.0 specification attaining Recommendation status. The tin-part:extensibleListDomain identifies the intended domain for this element and the domain's domain-member relationships are defined at tin-part:extensibleListLinkroleLocation to serve as guidance in reporting values using this element. When the datatype of the element changes, the element lookups will be included in validation of XBRL instances in the future Taxonomy version.
	PublishDate	2018-01
	extensibleListDomain	RetirementPlanTaxStatusDomain
	extensibleListLinkroleLocation	http://xbrl.fasb.org/us-gaap/2020/elts/us-gaap-eedm-def-2020-01-31.xml

- TINs will be simplified for 2021
  - Element parts contain information for validation

Enumerations 2.0

Element structure

- Element parts contain domain of allowed values

```
<xs:element name="DefinedContributionPlanTaxStatusExtensibleList" id="us-
gaap_DefinedContributionPlanTaxStatusExtensibleList" type="enum2:enumerationSetItemType"
enum2:domain="us-gaap:RetirementPlanTaxStatusDomain" substitutionGroup="xbrli:item"
enum2:linkrole="http://fasb.org/us-gaap/role/eedm/ExtensibleEnumerationLists" nillable="true"
xbrli:periodType="instant"/>
```

ⓘ us-gaap:DefinedContributionPlanTaxStatusExtensibleList	
▽ General	
Abstract	☐
Nillable	☑
Balance	
Period Type	instant
Subst. Group	xbrli:item
Type	enum2:enumerationSetItemType
Id	us-gaap_DefinedContributionPlanTaxStatusExtensibleList
▽ Custom	
enum2:linkrole	http://fasb.org/us-gaap/role/eedm/ExtensibleEnumerationLists
enum2:domain	us-gaap:RetirementPlanTaxStatusDomain

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11

Enumerations 2.0

Validation (Impact to software)

- Validation of the instance document requires three primary conditions for the reported facts
  - Proper format of value
  - Element reported as a fact must exist in a schema
  - Element must be present in the domain-member relationships defined in the US GAAP and SRT taxonomies
- Additional validation
  - Space-separated list of values
  - Listed facts must be unique
  - Lexicographically ordered

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Proper value format

- The values require URI-based notation
  - Differs than REGEX pattern provided in the custom data type

(15) **Employee Benefit Plan**

The Company established a discretionary 401(k) plan effective January 2005. The 401(k) plan was amended and restated in May 2006. The 401(k) plan covers substantially all employees who have attained age 21. The

participants may elect to defer a percentage of their compensation as allowable by law. The Company can make discretionary matching contributions but has not done so through December 31, 2019.

o 2020 and before:

Primary Items	31-Dec-2019
Postemployment Benefits [Abstract]	
401(k) plan - Defined Contribution Plan, Sponsor Location [Extensible List]	country:US
401(k) plan - Defined Contribution Plan, Tax Status [Extensible List]	us-gaap:QualifiedPlanMember

Enumerations 2.0

Proper value format

- The values require URI-based notation

  • Differs than REGEX pattern provided in the custom data type

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participants may elect to defer a percentage of their compensation as allowable by law. The Company can make discretionary matching contributions but has not done so through December 31, 2019.

  • Format of the facts using Enumerations 2.0:

Element Label	Value
us-gaap:DefinedContributionPlanSponsorLocationExtensibleList	http://xbrl.sec.gov/country/2020-01-31#US
us-gaap:DefinedContributionPlanTaxStatusExtensibleList	http://fasb.org/us-gaap/2020-01-31#QualifiedPlanMember

Enumerations 2.0

Proper value format

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Element Label	Value
us-gaap:DefinedContributionPlanSponsorLocationExtensibleList	http://xbrl.sec.gov/country/2020-01-31#US
us-gaap:DefinedContributionPlanTaxStatusExtensibleList	http://fasb.org/us-gaap/2020-01-31#QualifiedPlanMember

Enumerations 2.0

Element reported as a fact must exist in a schema

- For the elements in US GAAP, SRT and SEC taxonomies, not an issue
- Extension elements must be created in the extension taxonomy in order to be valid

Element Name: *TypeOfRevenueExtensibleList*
Company Name: *ADAPTIMMUNE THERAPEUTICS PLC*
Period: 1H, 2019
Filing Date: 2019-08-01

Filing Link: http://www.sec.gov/Archives/edgar/data/162122

adap:DevelopmentAndServiceMember

Enumerations 2.0

Element must be present in the domain-member relationships defined in the US GAAP and SRT taxonomies

- Relationships included in the DTS of us-gaap-2020-01-31.xsd
  - Include with 2021 schema

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
(c) 2010-2020 Financial Accounting Foundation; (c) 2007-2010 XBRL US, Inc.  All Rights Reserved.
Notice: Authorized Uses are Set Forth at http://xbrl.fasb.org/terms/TaxonomiesTermsConditions.html
-->
<xs:schema elementFormDefault="qualified" targetNamespace="http://fasb.org/us-gaap/2020-01-31" xmlns:enum="http://xbrl.org/2014/extensible-enumerations"
xmlns:link="http://www.xbrl.org/2003/linkbase" xmlns:nonnum="http://www.xbrl.org/dtr/type/non-numeric" xmlns:num="http://www.xbrl.org/dtr/type/numeric" xmlns:srt-
types="http://fasb.org/srt-types/2020-01-31" xmlns:us-gaap="http://fasb.org/us-gaap/2020-01-31" xmlns:us-types="http://fasb.org/us-types/2020-01-31"
xmlns:xbrldt="http://xbrl.org/2005/xbrldt" xmlns:xbrli="http://www.xbrl.org/2003/instance" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xs="http://
www.w3.org/2001/XMLSchema">
    <xs:annotation>
        <xs:documentation>
This file is the schema file for us-gaap (us-gaap).
</xs:documentation>
        <xs:appinfo>
            <link:linkbaseRef xlink:role="http://www.xbrl.org/2003/role/definitionLinkbaseRef" xlink:href="../elts/us-gaap-eedm-def-2020-01-31.xml"
xlink:type="simple" xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"/>
            <link:linkbaseRef xlink:role="http://www.xbrl.org/2003/role/definitionLinkbaseRef" xlink:href="http://xbrl.fasb.org/srt/2020/elts/srt-eedm1-
def-2020-01-31.xml" xlink:type="simple" xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"/>
        </xs:appinfo>
    </xs:annotation>
    <xs:import namespace="http://www.xbrl.org/2003/instance" schemaLocation="http://www.xbrl.org/2003/xbrl-instance-2003-12-31.xsd"/>
    <xs:import namespace="http://www.xbrl.org/dtr/type/numeric" schemaLocation="http://www.xbrl.org/dtr/type/numeric-2009-12-16.xsd"/>
    <xs:import namespace="http://www.xbrl.org/dtr/type/non-numeric" schemaLocation="http://www.xbrl.org/dtr/type/nonNumeric-2009-12-16.xsd"/>
    <xs:import namespace="http://xbrl.org/2005/xbrldt" schemaLocation="http://www.xbrl.org/2005/xbrldt-2005.xsd"/>
    <xs:import namespace="http://www.xbrl.org/2006/ref" schemaLocation="http://www.xbrl.org/2006/ref-2006-02-27.xsd"/>
    <xs:import namespace="http://fasb.org/us-types/2020-01-31" schemaLocation="us-types-2020-01-31.xsd"/>
    <xs:import namespace="http://fasb.org/srt-types/2020-01-31" schemaLocation="http://xbrl.fasb.org/srt/2020/elts/srt-types-2020-01-31.xsd"/>
```

Enumerations 2.0

Element must be present in the domain-member relationships defined in the US GAAP and SRT taxonomies

- Domain-member relationships that can be augmented
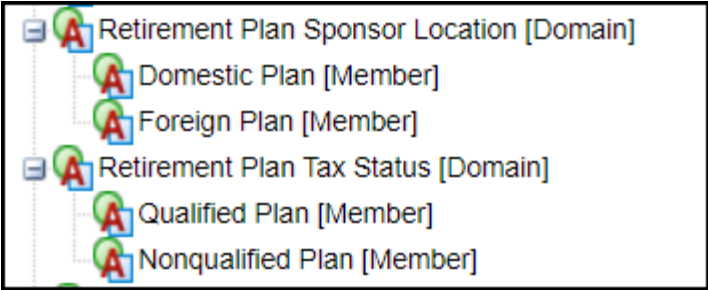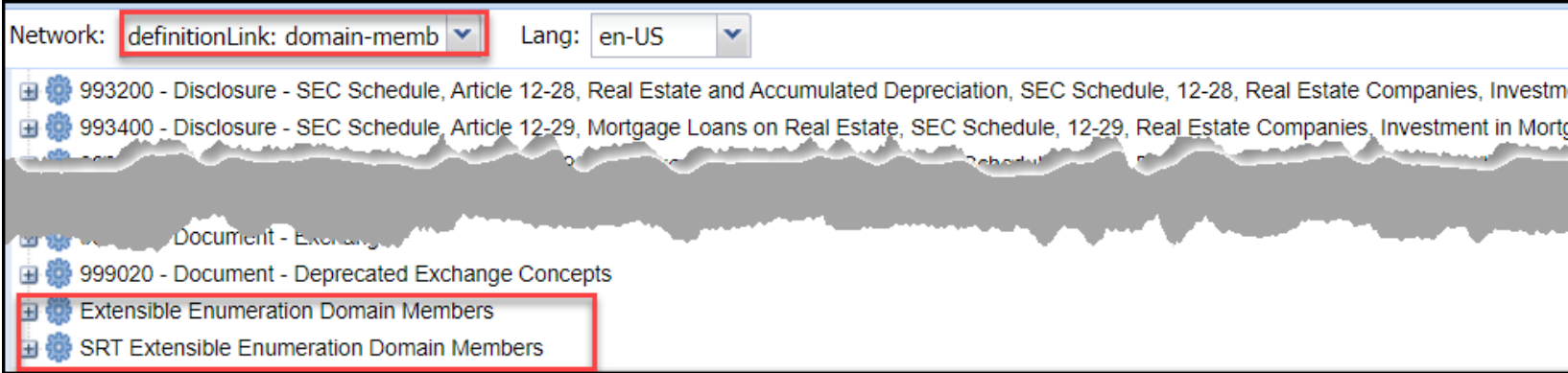
Enumerations 2.0

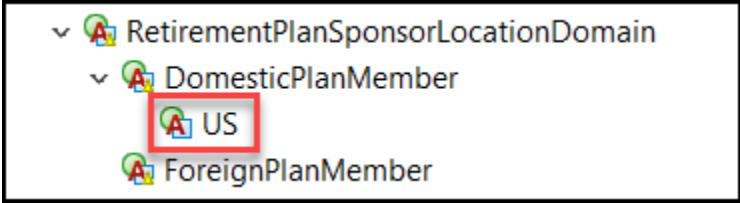Element must be present in the domain-member relationships defined in the US GAAP and SRT taxonomies

- Augmented in registrants' extension definition linkbase files

```xml
<?xml version='1.0' encoding='UTF-8'?>
<link:linkbase xmlns:link="http://www.xbrl.org/2003/linkbase" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.xbrl.org/2003/linkbase
http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd">
    <link:arcroleRef arcroleURI="http://xbrl.org/int/dim/arcrole/domain-member" xlink:href="
    http://www.xbrl.org/2005/xbrldt-2005.xsd#domain-member" xlink:type="simple"/>
    <link:roleRef roleURI="http://fasb.org/us-gaap/role/eedm/ExtensibleEnumerationLists" xlink:href="
    http://xbrl.fasb.org/us-gaap/2020/elts/us-roles-2020-01-31.xsd#eedm" xlink:type="simple"/>
    <link:definitionLink xlink:role="http://fasb.org/us-gaap/role/eedm/ExtensibleEnumerationLists" xlink:type=
    "extended">
        <link:loc xlink:href="https://xbrl.sec.gov/country/2020/country-2020-01-31.xsd#country_US" xlink:label=
        "lbl_US" xlink:type="locator"/>
        <link:loc xlink:href="
        http://xbrl.fasb.org/us-gaap/2020/elts/us-gaap-2020-01-31.xsd#us-gaap_DomesticPlanMember" xlink:label=
        "lbl_DomesticPlanMember" xlink:type="locator"/>
        <link:definitionArc order="1.0" xlink:arcrole="http://xbrl.org/int/dim/arcrole/domain-member" xlink:from=
        "lbl_DomesticPlanMember" xlink:to="lbl_US" xlink:type="arc"/>
    </link:definitionLink>
</link:linkbase>
```

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Element must be present in the domain-member relationships defined in the US GAAP and SRT taxonomies

- Augment the list of members to tag facts

Enumerations 2.0

Example with multiple values

> In addition, the Company maintained defined benefit pension plans for employees in The Netherlands, Poland, France and Norway, a defined contribution plan for employees in Ireland, the United Kingdom, Canada, Slovakia, Denmark, Finland, Sweden, Germany and India, and defined contribution postretirement plans in Italy, Belgium, China, Korea, Japan, Singapore, Thailand and Taiwan resulting in contributions charged to operations of $5.9

Enumerations 2.0

Example with multiple values

Enumerations 2.0
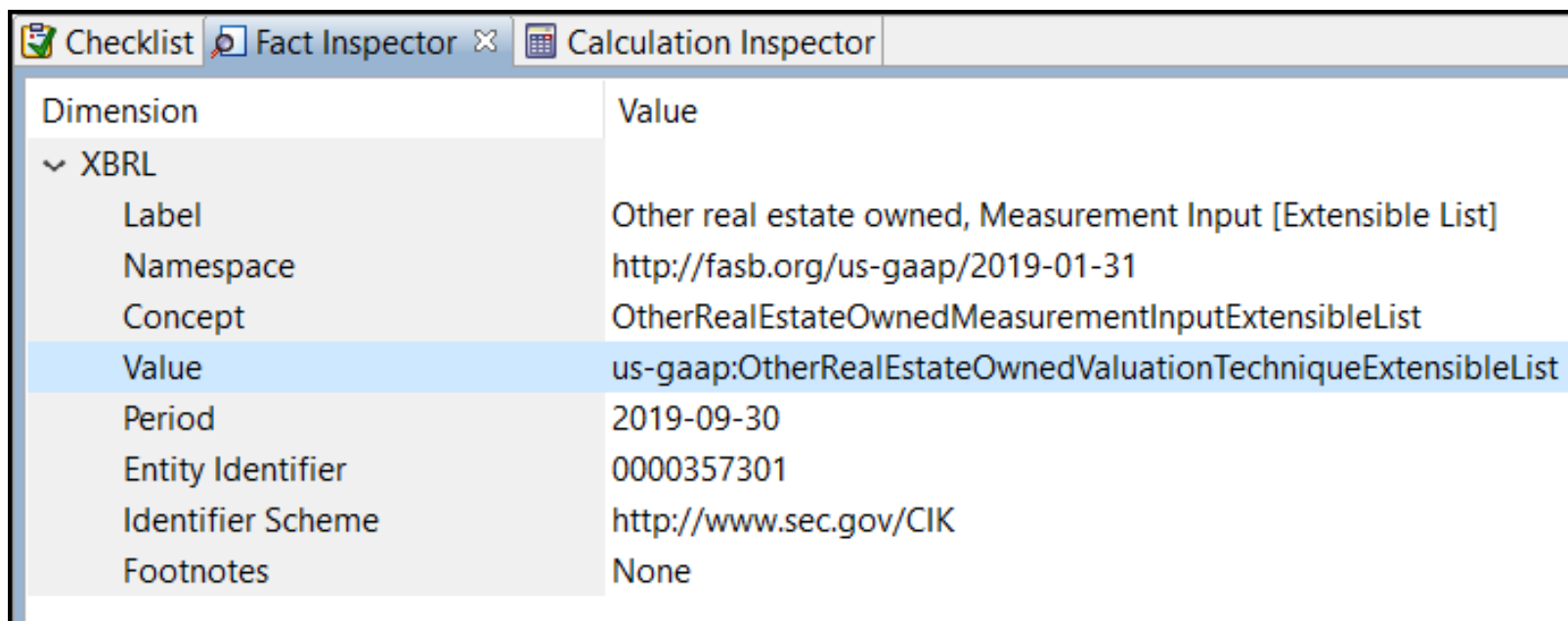
Example with multiple values

Retirement Benefits Abstract	
■ DefinedBenefitPlanSponsorLocationExte	https://xbrl.sec.gov/country/2020-01-31#FR https://xbrl.sec.gov/country/2020-01-31#NL https://xbrl.sec.gov/country/2020-01-31#NO https://xbrl.sec.gov/country/2020-01-31#PL
Other Postretirement Benefit Plans Member	
Retirement Benefits Abstract	
■ DefinedContributionPlanSponsorLocatior	https://xbrl.sec.gov/country/2020-01-31#BE https://xbrl.sec.gov/country/2020-01-31#CN https://xbrl.sec.gov/country/2020-01-31#IT https://xbrl.sec.gov/country/2020-01-31#JP https://xbrl.sec.gov/country/2020-01-31#KR https://xbrl.sec.gov/country/2020-01-31#SG https://xbrl.sec.gov/country/2020-01-31#TH https://xbrl.sec.gov/country/2020-01-31#TW

Enumerations 2.0

Another issue identified in facts reported using Extensible List elements

- - Fact should not be an extensible list element

Checklist	Fact Inspector ✕	Calculation Inspector	

Dimension	Value
∨ XBRL	
Label	Other real estate owned, Measurement Input [Extensible List]
Namespace	http://fasb.org/us-gaap/2019-01-31
Concept	OtherRealEstateOwnedMeasurementInputExtensibleList
Value	us-gaap:OtherRealEstateOwnedValuationTechniqueExtensibleList
Period	2019-09-30
Entity Identifier	0000357301
Identifier Scheme	http://www.sec.gov/CIK
Footnotes	None

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Thank You