SAIC

FFIEC Call Report Modernization Project
CDR Interchange Specification

Version 2.18

FFIEC Call Report Modernization Project

CDR Interchange Specification

Authorized for issue by:

Robert Absher
FDIC
Project Manager

Signature **Date**

Cinu Philip
SAIC
Project Manager

Signature **Date**

Revision History

Date	Version	Description	Author
12-Sep-07	2.0	**Additions:** - Updates to handle dimensions	Sunil Matte
19-Dec-07	2.1	**Additions:** - Dimensional edits and supporting changes.	Sunil Matte
23-Feb-15	2.2	**Additions:** - SOD Updates	Sunil Matte
15-Apr-15	2.3	Changes: - Changed UNINUM to office number - New web service for branch addresses - Other corrections	Sunil Matte
25-Apr-15	2.4	Changes: - Corrections to various sections	Sunil Matte
09-Jul-15	2.5	Changes: - New function ValidateBranchStructureData - Clarified Reportability rule taxonomy section to indicate no dimensional changes - New SOD reporting guidance - Updated GetAllBranches signature & output	Sunil Matte
09-Aug-15	2.6	Changes - updated rule 8 of instance document specification on how to report dimensional concepts - updated web service definitions to include data series.	Sunil Matte
18-Mar-16	2.7	Changes - .changes to core dimensional schema - changed the decimcal attribute for concepts to 8 from 6. - changes to dimensional instance rules - changed IsValidAddress function signature - updated snippets with official sod concept names	Supriya Prabhu Sunil Matte
05-July-17	2.8	Changes - Updated edit IsValidAddress parameter zip from integer to string beginning of reporting period 06-30-2017. - Updated Vendor list and codes	Frank Hsia
24-Sept-19	2.9	Change - Updated to add concept RCONKX18 and details.	Frank Hsia
17-April-20	2.10	Change – Updated for TOD13, feature 2: Create New Concept Type	Frank Hsia
21-May-21	2.11	Change – new branches are assigned temporary office number beginning with 90000	Dina Buckley
02-Nov-21	2.12	Added to list valid character set for XML Instance Document	Frank Hsia
10/25/2024	2.13	Change - Updated Vendor list - Web services information moved to *CDR Vendor Specification for MFA* and *SIS CDR API Vendor Web Services*	Dina Buckley
11/6/2024	2.14	Change - Updated Vendor list	Dina Buckley

2/4/2025	2.15	Change - Vendor name change	Dina Buckley
1/22/2026	2.16	Change - Updated the schema links to cdr.ffiec.gov	Ethan Huss
3/12/2026	2.17	Change - Updated http: to https: in the examples	Dina Buckley
07/17/2026	2.18	Change - Update to include footnotes for lines	Ethan Huss

Note: This document – "CDR Interchange Specification" and other associated documents and sample taxonomies are versioned documents. Please ensure that you have the latest version of this document.

Contact the CDR Help Desk to request the latest version of this document.
Please review the accompanying sample taxonomies that demonstrate the use of various aspects specified in this document.

Current versions of the FFIEC generated taxonomies do not use all aspects of the specification. These sections are for the purpose of future use. Any anticipated near-term use of these sections would be communicated to all parties involved by appropriate means including updating this section of the document.

Following is information about currently unused aspects:

- The following list of reference operators are not required in the current taxonomies and are therefore not being used:
    - Named relative context resource
    - Relative period offset expressions
        - [P1Y] Forward one year
        - [-P1M] Back one Month
        - [-P1D] Back one Day
        - [-P1Y/-01-01] First Month First Day
        - [-P1Y/-01] First Month Current Day

Table of Contents

1. Introduction 7
- 1.1 Purpose 7
- 1.2 References 7
- 1.3 Overview 7

2. Core Taxonomy 9
- 2.1 Dimensions 9
  - 2.1.1 Dimensions 9
  - 2.1.2 Domain 9
  - 2.1.3 Domain Member 9
  - 2.1.4 Implicit Dimension 9
  - 2.1.5 Explicit Dimension 9
  - 2.1.6 Default Dimension 10
  - 2.1.7 Hypercube 10
  - 2.1.8 Dimensional Concept 10
  - 2.1.9 Dimension Schedule 10
- 2.2 MDR Schema 10
- 2.3 Concepts Schema 10
- 2.4 Source concepts schema 11
- 2.5 Core Schema 12
- 2.6 Definition Linkbase 14
- 2.7 Captions Linkbase 15
- 2.8 Instructions Linkbase 17
- 2.9 Presentation Linkbase 17
  - 2.9.1 Presentation Linkbase Meta Data 19
  - 2.9.2 Presentation for Dimensional Data 23
- 2.10 Calculation Linkbase 24
- 2.11 Reference Linkbase 25
- 2.12 Edits 27
  - 2.12.1 Formula Linkbase 29
- 2.13 Formula Grammar 31
  - 2.13.1 Operators 31
  - 2.13.2 Pre-binding and context functions 35
  - 2.13.3 Date functions 35
  - 2.13.4 Math functions 36
  - 2.13.5 String Functions 37
  - 2.13.6 Special Functions 39
  - 2.13.7 Operator precedence 40
- 2.14 Edit Codes and Explanation Text 40
- 2.15 Formula Messages Linkbase 42
- 2.16 Negative Items 43

3. Reportability Rules Taxonomy 44
- 3.1 Business Purpose 44
- 3.2 Definition 44
  - Reportability Concept 44
  - Reportability Rule (the Boolean formula) 46
  - Reportability Edit (the association or connector to the Report concept) 48
- 3.3 Reportability rules design 48
  - 3.3.1 Taxonomy architecture 48

3.3.2 Messages 51
3.4 Processing Guidelines 51
3.4.1 Pre Processing of Reportability Edits 51
3.4.2 Post Processing of Reportability Edits 51

4. Instance Document Specification 51
4.1 Guidelines on ‘concepts to be reported in a instance document’ 59
4.2 Guidelines on ‘reporting monetary concepts’ 61
4.3 Additional Guidelines on Reporting SOD Data 61
4.4 Valid Character Set for XML Instance Document 61

5. Taxonomy and linkbases naming Conventions 62

6. Appendix A - Core XBRL and FFIEC Schemas 63

7. Appendix B – Vendor Identification (ID) 64

8. Appendix C - Web Services 64

CDR Interchange Specification

1. Introduction

The Federal Financial Institution Examination Council (FFIEC) Central Data Repository (CDR) is the system that will be used by the Federal Reserve Board (FRB), Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of Currency (OCC) to collect, validate and store the quarterly Call Report data of banks and potentially other regulatory reports in the future. The CDR system requires that data be submitted in the form of XBRL instances. XBRL (Extensible Business Reporting Language) is an open, XML-based framework for expressing metadata (taxonomies) and data (instances) for business reporting. All the metadata and data in the CDR system uses the XBRL 2.1 specification [XBRL]. This document assumes some familiarity with the XBRL 2.1 specification.

1.1 Purpose

The purpose of this document is to describe the syntax and semantics of XBRL taxonomies and linkbases generated by the CDR system. In addition, the document also describes the syntax of the instance documents that are to be submitted to the CDR system.

1.2 References

[XBRL] Phillip Engel, Walter Hamscher, Geoff Shuetrim, David vun Kannon, and Hugh Wallis.
Extensible Business Reporting Language (XBRL) 2.1 Specification (Final Recommendation)
https://www.xbrl.org/SpecRecommendations/

[Schema] World Wide Web Consortium.
XML Schema Part 0: Primer.
https://www.w3.org/TR/xmlschema-0/

[XLink] World Wide Web Consortium.
XML Linking Language (XLink) Version 1.0
https://www.w3.org/TR/xlink/

[Dimensions] Ignacio Hernández-Ros and Hugh Wallis.
XBRL Dimensions 1.0 Specification
https://specifications.xbrl.org/work-product-index-group-dimensions-dimensions.html

1.3 Overview

The document is organized under the following sections

1. Core Taxonomy: This taxonomy describes all reportable concepts along with the formulas for validating these concepts and information on how to present these concepts. A high level architecture is shown in Figure 1.
2. Reportability taxonomy: Reportability taxonomy describes rules to determine what concepts must be reported by a given bank. A high level architecture is show in Figure 1.
3. Instance Document Specification: This section describes components of a FFIEC instance document. Instance documents contain context, unit and dimension elements that provide additional information needed to interpret the facts reported by an institution.

4. Sample Taxonomies and Instance Document: Lists various addendum documents containing taxonomies samples and instance document example.

Core & Reportability Taxonomy Architecture

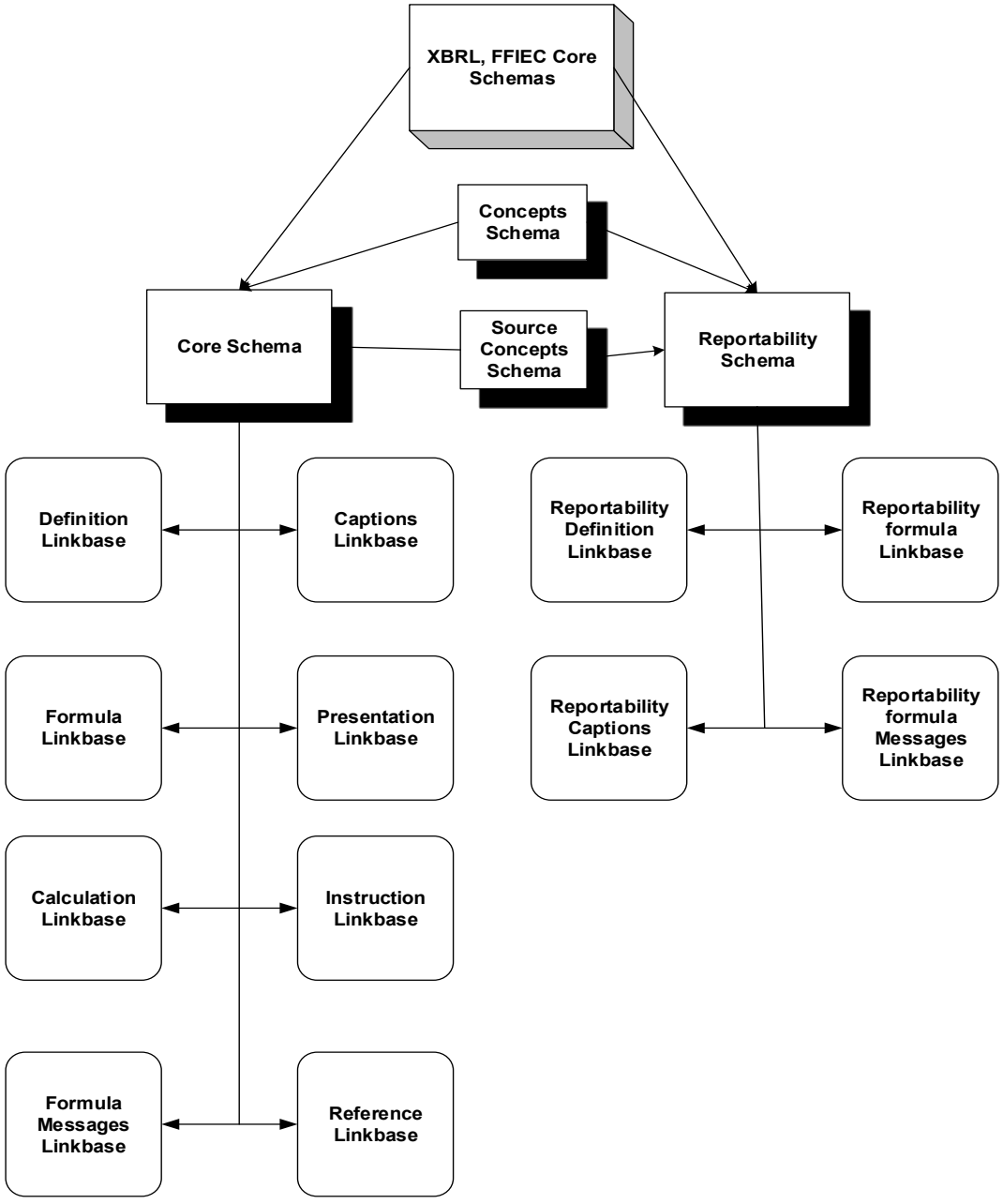


Figure 1 Taxonomy Architecture

2. Core Taxonomy

The Core taxonomy consists of an XML Schema that defines concepts, formulas, abstract presentation elements, and various linkbases. The XML Schema documents contain element definitions along with data types and other XBRL attributes that are used to constrain their usage. Linkbases are extended links that contain inter concept relationships and also relationships between concepts and their documentation or formula expression.

2.1 Dimensions

Taxonomies generated from CDR were originally based on the core XBRL specification, these taxonomies only support concepts that can be reported for a specific reporting period and entity. The core XBRL specification does not support detailed breakdown of a particular accounting facts as it only has mechanisms for describing the entity information and time period associated to the reported concept.

For example consider the scenario where a reporting entity is required to report the value of sales by product. It is not best practice to create concepts for all combination of sales and products as this is bound to change and more so there is only accounting fact that is being measured. The "Product ID" is another aspect of the "sales" fact and is also known as a dimension of the "sales" fact. Dimensions are additional aspects that characterize an accounting fact. The modular XBRL dimension specification has provision for taxonomy authors to specify across what dimensions a fact can be reported.

The federal financial regulators have decided to use CDR for processing Summary of deposits (SOD) data. CDR will incorporate XBRL dimensions to process this new data series.

Note: We have incorporated snippets of XML in this specification to aid the user; these snippets are indeed parts of a valid taxonomy but are only illustrative in nature. The samples illustrate how branch data would be collected using dimensions in the CDR system. It is essential that the readers of this document understand XBRL dimensions in addition to the core XBRL specification.

The following definitions aid in better understanding dimensions:

2.1.1 Dimensions

Dimensions are defined as the different aspects by which a fact can be characterized. For example, branch dimension identifies the branch of the "deposits" fact value.

2.1.2 Domain

Domain represents the set of values that a given dimension can have. For example, domain of the branch dimension could possibly be limited to all positive integers.

2.1.3 Domain Member

Each possible value for a dimension in the domain is a member of that dimension. For example, "1" is a domain member of the dimension "branch".

2.1.4 Implicit Dimension

Implicit dimensions or typed dimensions refer to dimensions whose domain is not enumerated. For example, the value of the branch dimension could possibly be a huge set of positive integers and more so likely to change very often. So it is defined as an implicit dimension, the implicit dimension declaration specifies the data type of all the dimension's domain members.

2.1.5 Explicit Dimension

Explicit dimensions are dimensions whose domain can be enumerated. For example, the region dimension can be enumerated to contain the following members: USA, Europe and Rest of the world.

2.1.6 Default Dimension

An explicit dimension member can be marked as a default dimension. This aids in reporting dimensional concepts without any explicit dimension in the instance document. The value of the dimension is inferred automatically during instance processing, thus removing the necessity of having different concept names to collect dimensional and non-dimensional fact values.

2.1.7 Hypercube

Hypercube represents a set of dimensions. Taxonomies generated from CDR will only involve hypercube with a single dimension.

2.1.8 Dimensional Concept

A concept that is tied to a dimension is referred to as a dimensional concept. For example, the concept "deposits" tied to the branch dimension is a dimensional concept. Each dimensional concept is uniquely identified using the value of the dimension, entity identifier and reporting period in the referenced context.

2.1.9 Dimension Schedule

A schedule that contains dimensional concepts is called a dimensional schedule. A schedule in CDR is associated with at most one dimension. For example, the SOD schedule contains concepts that are tied to the branch dimension.

2.2 MDR Schema

MDR schema is an XML Schema document specific to the CDR system. It is not based on the XBRL specification. It is used to support versioning of the CDR taxonomies. It contains definitions for the 'versionInfo', 'versionName', 'versionDate' and 'VersionDescription'. The MDR schema is imported in the Core & Reportability schema files.

Taxonomies involving dimensions have no change in the MDR Schema file.

2.3 Concepts Schema

Concepts schema is an XML Schema document that contains element definitions of [1]Micro Data Reference Manual (MDRM) concepts that occur in a Report. The core and reportablity schemas must import the concepts schema. This schema is used to maintain a pool of concepts that can be reported in a data series. There is no versioning of the schema namespace. The namespace for the concepts schema MUST be:

https://www.cdr.ffiec.gov/xbrl/[DataSeries]/concepts

For call taxonomy this would be

https://www.cdr.ffiec.gov/xbrl/Call/concepts

Note: Element names in XML are case sensitive and hence any concept names in the taxonomy are case sensitive. All official taxonomies published by FFIEC and all prior period instance documents available from CDR MUST use the same case in concept names.

Note: All concepts MUST have a "nillable" attribute to support the use of NULL items reported by financial institutions (FI).

Note: All concepts in Concepts.xsd have a new attribute called rrConcepttype. The following table defines the rrConceptType attribute in the concepts schema file:

rrConceptType	Description

[1] The Micro Data Reference Manual is a dictionary used by the Federal Reserve System to manage and define data concepts used within the FRB's data collection process.

StructureVendor	Reportability Concepts that must be reported by vendor software to CDR.
Structure	Reportability concepts that vendors use for the vendor software. These are not reported to CDR. CDR calculates these using NIC data.
Other	All other concepts.

```
<element id="cc_RCONKX18"name="RCONKX18" type="xbrli:BooleanItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant" nillable="true"
rrConceptType ="structureVendor" />

<element id="cc_RCONC588"name="RCONC588" type="xbrli:BooleanItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant" nillable="true"
rrConceptType ="structure" />

<element         id="cc_RCON2200"name="RCON2200"         type="ffieci:MonetaryItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant" nillable="true" rrConceptType
="other" />
```

Taxonomies involving dimensions involve changes to the concepts schema. These changes include definitions for any new concepts that will be reported using dimensions. For example the following concept definitions are included in the concepts schema to aid in collecting branch data.

```
<element id="sc_RCON2200" name="RCON2200" type="ffieci: MonetaryItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant" nillable="false" />

<element id="sc_SUMDG950" name="SUMDG950" type="ffieci:
nonNegativeIntegerItemType" substitutionGroup="xbrli:item"
xbrli:periodType="instant" nillable="false" />
```

Note: The example illustrated above depicts the concept definition for "Service Type" fact value. This concept definition is used to collect the service type values of all the branches with the respective contexts dictating the identity of the branch.

2.4 Source concepts schema

Source concepts schema is an XML schema that contains element definitions of concepts that belong to another data series. This is an optional schema file which is used in the SOD taxonomy. The structure of the source concepts schema file is identical to the concepts schema file.

There is no versioning of the schema namespace. The namespace for the concepts schema MUST be:

https://www.cdr.ffiec.gov/xbrl/[DataSeries]/SourceConcepts

In the SOD taxonomy this would be

https://www.cdr.ffiec.gov/xbrl/SOD/SourceConcepts

For example the following call concept definition would be included in the SOD source concepts schema to aid in verifying total branch deposits.

```
<element id="cc_RCON2200" name="RCON2200" type="ffieci:MonetaryItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant"
nillable="false" />
```

2.5 Core Schema

Core Schema is an XML Schema document that contains definitions of abstract presentation elements, edit results, edit codes and edit explanation text. It imports the Concepts schema.

An abstract concept 'pres-report' is used in linkbases to create the root element in a presentation relationship hierarchy. Presentation elements are declared as abstract as they MUST never appear in an instance document.

Core schema contains element definitions for 'edit results', 'edit error code' and 'edit explanation text' for each valid edit in the current reporting period. 'Edit result' concept is of Boolean type. 'Edit error code' is of integer type and is restricted to a set of valid codes using the 'enumeration' facet. Explanation text is of string type.

The namespace on this schema MUST be versioned using the period information and the version number. For example the namespace on a Call Core schema for the reporting period September 2003 and version 1 would be:

https://www.cdr.ffiec.gov/xbrl/call/report041/2003-09-30/v1/

All Core schemas import the following schemas – XBRL instance schema, XBRL linkbase schema, concepts schema, source concepts schema (if taxonomy uses concepts from a different data series) & XBRL dimensions schema (if taxonomy involves dimensions)
Taxonomies involving dimensions involve changes to the core schema. Concept definitions that represent the dimensions are included in this schema. The XML element representing a dimension member is defined as a complex type. The complex type contains one child element which is the key for identifying unique dimension values. In case of 'Summary of deposits (SOD)' data series which has a branch dimension and uses the office number as dimension key, the following definitions would be included:

```
<!--  Branch Dimension member declaration -->
<element name="branch" id="sod_branch">
  <complexType>
    <sequence>
      <element name="ID" type="integer" />
    </sequence>
  </complexType>
</element>

<! -- Branch Dimension declaration -->
<element name="branchDimension" id="sod_branchDimension"
substitutionGroup="xbrldt:dimensionItem" type="xbrli:stringItemType"
abstract="true" xbrli:periodType="instant" xbrldt:typedDomainRef="#sod_branch"
/>

<! -- Summary of Deposits Hypercube declaration   -->
<element name="branchCube" id="sod_branchCube" type="xbrli:stringItemType"
substitutionGroup="xbrldt:hypercubeItem" xbrli:periodType="instant"
abstract="true" nillable="true" />
```

The above example includes definitions for an complex type (branch) – which holds the branch identifier(Office Number of the branch) in the instance document, an abstract concept (branchDimension) which represents the new dimension being added and another abstract concept (branchCube) that represents a hypercube. This is an illustration of the implicit/typed dimensions in XBRL; CDR will only allow implicit dimensions in the taxonomies for representing detailed breakdowns.

Note: XBRL has provision for two kinds of dimensions – implicit and explicit. Explicit dimensions are used when the domain of dimensional members can be easily enumerated. Implicit dimensions are used whenever that is not the case. A hypercube is a placeholder used to tie multiple dimensions together; taxonomies generated from CDR will have only one dimension per hypercube.

All core taxonomies generated by CDR that support dimensions will also include a default dimension. This is an explicit dimension and has only one member which is also the default. Certain concepts are reported using dimensions (breakdown) and also for the reporting entity using the same name. These concepts must be tied to the appropriate dimensions, but this would cause validation problems when the processor encounters the same fact appears in an instance document with no dimension information. In order to facilitate proper validation of instance documents, XBRL provides a default dimension that can be associated to concepts that can be reported with or without dimensions.

The 'Summary of deposits' data series collects deposits by branch and total deposits for the entire bank. The core taxonomy would have one implicit/typed "branch" dimension to allow for reporting branch level data. The taxonomy would also have one explicit dimension to allow for reporting bank level data. The total deposits concept will be related to both these dimensions, deposits reported with no dimension information would be processed as a bank deposits and deposits reported with dimension information would be processed as branch deposits.

```
<! -- Default Branch Dimension declaration -->
<element name="allBranchesDimension" id="sod_allBranchesDimension"
   substitutionGroup="xbrldt:dimensionItem" type="xbrli:stringItemType"
   abstract="true" xbrli:periodType="instant" />
<! -- All Branches domain declaration -->
<element name="allBranchesDomain" id="sod_allBranchesDomain"
   substitutionGroup="xbrli:item" type="xbrli:stringItemType" abstract="true"
   xbrli:periodType="instant" />
<! -- AllBranches dimension member declaration -->
<element id="sod_AllBranchesMember" name="AllBranchesMember"
   type="xbrli:stringItemType" abstract="false" substitutionGroup="xbrli:item"
   xbrli:periodType="instant" />
<! -- All branches Cube declaration   -->
<element id="sod_AllBranchesCube" name="AllBranchesCube" type="xbrli:stringItemType"
   substitutionGroup="xbrldt:hypercubeItem" xbrli:periodType="instant"
   abstract="true" nillable="true" />
```

The above snippet from the schema depicts an explicit default dimension definition along with other supporting domain and hypercube definitions.

An abstract concept is used to group sets of concepts that can be reported against a particular dimension. This abstract concept is tied to the dimension using appropriate arc roles as described in the next section.

```
<! -- Summary of Deposits Measure Domain declaration   -->
<element id="sod_BranchDomainSource" name="BranchDomainSource"
   type="xbrli:stringItemType" substitutionGroup="xbrli:item"
   xbrli:periodType="instant" abstract="true" nillable="true" />

<! -- Summary of Deposits All Branches Domain declaration   -->
<element id="sod_AllBranchesDomainSource" name="AllBranchesDomainSource"
   type="xbrli:stringItemType" substitutionGroup="xbrli:item"
   xbrli:periodType="instant" abstract="true" nillable="true" />
```

2.6 Definition Linkbase

The definition linkbase contains the list of all MDRM concepts that would take part in the particular Core taxonomy for a reporting period. In essence, it is a pool of MDRM concepts that are applicable to that particular Report (Call FFIEC 031 and 041 etc). Definition linkbase MUST contain a single extended link that captures the relationship between the MDRM concepts and the root ('pres-report') concept. A 'locator' element is used to point to the elements in the corresponding Core schema, a 'definitionArc' to relate concepts. The arc role attribute on the 'definitionArc' element MUST be set to:

```
http://www.xbrl.org/2003/role#general-special
```

Taxonomies involving dimensions contain changes to the definition linkbase. The definition linkbase is used to specify what information may be reported for the specified reporting period. New extended links and relationships have been defined to aid in specifying what dimensional data can be reported. Relationships between concepts and dimensions are specified in two different custom extended links. These extended links are defined in the core schema and referenced in this linkbase.

One of the extended links called "dimensionLink" is used to specify which concepts are to be reported against a dimension. A relationship between the hypercube and its dimension is specified according to the dimensions specification using the following arc role:

Domain-member relationships are specified between the abstract domain concept and the set of concepts that are to be reported against a dimension.

And finally the abstract concept is tied to the hypercube; this ties all the pieces together using the following arc role:

The second extended link is used to allow for dimensional concepts to be reported for the entire entity. There is at most one "defaultDimensionLink" extended link in the definition linkbase. As specified in the section above, an explicit dimension is used to express this relationship. The explicit dimension is tied to a hypercube using the following arc role:

An explicit dimension has a domain of members that can appear in a valid instance document. In the case of CDR, the dimension that represents the entire reporting entity can have only one member. The

relationship between the domain of a dimension and its members is established using the following arc role:

http://xbrl.org/int/dim/arcrole/domain-member

The following arc role is used to establish the relationship between the dimension and its domain:

http://xbrl.org/int/dim/arcrole/dimension-domain

Domain-member relationships are specified between the abstract domain concept and the set of concepts that are to be reported against the dimension.

http://xbrl.org/int/dim/arcrole/domain-member

And finally the abstract concept is tied to the hypercube; this ties all the pieces together using the following arc role:

http://xbrl.org/int/dim/arcrole/all

Note: The value of the "xbrldt:contextElement" attribute on the arc between the abstract concept and the hypercube dictates how dimensional information has to be reported to the CDR system. The value of this attribute is always set to "scenario" in taxonomies generated from CDR.

Definition linkbases in dimensional taxonomies contain the following arc role references:

```
<arcroleRef xlink:type="simple" xlink:href="http://www.xbrl.org/2005/xbrldt-
2005.xsd#all" arcroleURI="http://xbrl.org/int/dim/arcrole/all" />
<arcroleRef xlink:type="simple" xlink:href="http://www.xbrl.org/2005/xbrldt-
2005.xsd#hypercube-dimension"
arcroleURI="http://xbrl.org/int/dim/arcrole/hypercube-dimension" />
<arcroleRef xlink:type="simple" xlink:href="http://www.xbrl.org/2005/xbrldt-
2005.xsd#domain-member" arcroleURI="http://xbrl.org/int/dim/arcrole/domain-
member" />
```

2.7 Captions Linkbase

Captions linkbase is represented using the XBRL Label linkbase. It contains the captions for the MDRM concepts and the presentation concepts. Caption linkbase MUST contain one extended link that has all the captions and relationships between concepts and captions. A 'locator' element is used to point to the concepts in the corresponding core schema and the concepts schema; a 'resource' element is used to contain the caption and a 'labelArc' to connect a concept to its caption. The arc role attribute on the 'labelArc' element MUST have either of the following three values:

https://www.cdr.ffiec.gov/xbrl/report/lineCaption

https://www.cdr.ffiec.gov/xbrl/report/columnCaption

https://www.cdr.ffiec.gov/xbrl/report/footnote

Concepts that are used as a line within a particular schedule MUST use the first arc role. Concepts that are used as column headings MUST use the second arc role.

Abstract presentation concepts that are used to represet lines on the report may contain one or more footnotes; footnotes are tied to the concepts using the footnote arc role. Footnote value contains two parts – the footnote reference and description, it follows the following syntax:

Footnote##*[reference] [description]*

Note: All footnote values start with the identifier 'Footnote##'; the reference and description are separated by a space.

```
<loc xlink:type="locator" xlink:href="call-report031-2026-06-30-
v297.xsd#ffiec031_pres-line-1106003" xlink:label="ffiec031_pres-line-
1106003" />
<labelArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
xlink:from="ffiec031_pres-line-1106003" xlink:to="ffiec031_pres-line-
1106003_lbl_footnote1" />
<label xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/footnote"
xlink:label="ffiec031_pres-line-1106003_lbl_footnote1"
xml:lang="en">Footnote##1  Institutions should report in item 2.a amounts
net of any applicable allowance for credit losses.</label>
<labelArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
xlink:from="ffiec031_pres-line-1106003" xlink:to="ffiec031_pres-line-
1106003_lbl_footnote2" />
 <label xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/footnote"
xlink:label="ffiec031_pres-line-1106003_lbl_footnote2"
xml:lang="en">Footnote##2 Item 2.a should equal Schedule RC-B, item 8,
column A, less Schedule RI-B, Part II, item 7, column B.</label>
```

There are changes to the captions linkbase in taxonomies that involve dimensions. New captions are provided to lines or columns which contain dimensional concepts and any new schedules that incorporate dimensions.

```
<loc xlink:type="locator" xlink:href="sod-report001-2016-06-30-
   v15.xsd#ffiec001_pres-line-723722" xlink:label="ffiec001_pres-line-
   723722" />
<labelArc xlink:type="arc"
   xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
   xlink:from="ffiec001_pres-line-723722" xlink:to="ffiec001_pres-line-
   723722_lbl_97" />
<label xlink:type="resource"
   xlink:role="https://www.cdr.ffiec.gov/xbrl/report/lineCaption"
   xlink:label="ffiec001_pres-line-723722_lbl_97"
   xml:lang="en">Deposits</label>

<loc xlink:href="sod-report-2015-06-30-v1.xsd#ffiec001_pres-ScheduleA-1-
   column-A" xlink:type="locator" xlink:label="ffiec001_pres-ScheduleA-1-
   column-A"/>
<labelArc xlink:type="arc" xlink:to="ffiec001_pres-ScheduleA-1-column-
   A_lbl_110" xlink:from="ffiec001_pres-ScheduleA-1-column-A"
   xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"/>
<label xlink:role="https://www.cdr.ffiec.gov/xbrl/report/columnCaption"
   xml:lang="en" xlink:type="resource" xlink:label="ffiec001_pres-ScheduleA-
   1-column-A_lbl_110">Change Code</label>
```

The snippet of XML above shows the captions attached to the dimensions. These captions aid in depicting dimensional data in a tabular format.

2.8 Instructions Linkbase

Instructions linkbase is represented using the label linkbase. It contains the instructions for the entire report, schedules and MDRM concepts. Instruction linkbase MUST contain one extended link that has all the instructions and relationships between elements and instructions. A 'locator' element is used to point to the elements in the corresponding core schema and the concepts schema, a 'resource' element is used to contain the caption and a 'labelArc' to connect a concept to its caption. The arc role attribute on the 'labelArc' element MUST be set to:

https://www.cdr.ffiec.gov/xbrl/report/lineInstruction

Taxonomies involving dimensions will contain instructions for any dimensional concepts.

2.9 Presentation Linkbase

The presentation linkbase specifies presentation relationships between concepts for a given report. The intent of the presentation linkbase is to represent the form-perspective of the metadata.

Figure 2 shows a graphical representation of a sample hierarchy of a presentation of concepts, consisting of a report, schedules, and lines.

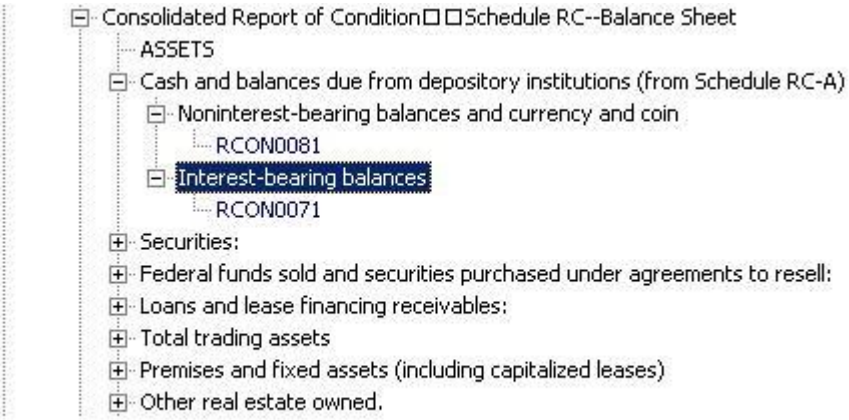


Figure 2 Presentation Linkbase viewed from XBRL development tool

The following is the content of the presentation linkbase for the above hierarchy and additional details regarding its various components.

```
<?xml version="1.0" encoding="utf-8" ?>
<linkbase xmlns="http://www.xbrl.org/2003/linkbase"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xlink="http://www.w3.org/1999/xlink"
xsi:schemaLocation="http://www.xbrl.org/2003/linkbase
http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd">
<roleRef xlink:type="simple" xlink:href="call-report041-2003-09-30-v1.xsd#column"
roleURI="https://www.cdr.ffiec.gov/xbrl/report/column" />
<roleRef xlink:type="simple" xlink:href="call-report041-2003-09-30-v1.xsd#line"
roleURI="https://www.cdr.ffiec.gov/xbrl/report/line" />
<presentationLink xlink:type="extended"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/line">
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1562" xlink:label="ffiec041_pres-line-1562" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC" xlink:to="ffiec041_pres-line-1562" order="2"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1563" xlink:label="ffiec041_pres-line-1563" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1562" xlink:to="ffiec041_pres-line-1563" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0081"
xlink:label="cc_RCON0081" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1563" xlink:to="cc_RCON0081" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1564" xlink:label="ffiec041_pres-line-1564" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1562" xlink:to="ffiec041_pres-line-1564" order="2"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0071"
xlink:label="cc_RCON0071" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1564" xlink:to="cc_RCON0071" order="1"
use="optional" />
</presentationLink>
</linkbase>
```

In XBRL, presentation relationships are limited to parent-child relationships. Each concept used in a presentationArc MUST have a "loc" element with an "xlink:type" attribute equal to "locator," an "xlink:href" with a reference to a valid taxonomy concept per the taxonomy schema, and an "xlink:label."

```
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0071"
xlink:label="cc_RCON0071" />
```

The "xlink:arcrole" attribute of the presentationArc element MUST be: "http://www.xbrl.org/2003/arcrole/parent-chilld."

```
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
```

The "xlink:from" attribute of the presentationArc element specifies the parent concept by referencing the label associated with that concepts in its "loc" element. The "xlink:to" attribute of the presentationArc specifies the child concept by referencing the label associated with that concepts in its "loc" element.

```
xlink:from="ffiec041_pres-1564" xlink:to="cc_RCON0071"
```

The "order" attribute of the presentationArc specifies the order in which child concepts should appear with respect to their sibling concepts. In the above example, RCON0081 (order=1) and RCON0071 (order=2) are siblings (each a child of pres-3217). RCON0081 with an order value of 1 should appear before all sibling concepts with a greater order value. Similarly, RCON0071 with an order value of 2 should appear before all sibling concepts with a greater order value. In this case, no concepts have an order value greater than 2. Order values MUST be non-integer, decimal numbers.

2.9.1 Presentation Linkbase Meta Data

The presentation linkbase contains metadata to represent a form-view of columns. The presentation linkbase contains two roles for the extended presentation link.

One of the extended presentation links provides a vertical view of the form. It MUST have the role:

https://cdr.ffiec.gov/xbrl/report/column

Each vertical view will be identified by a column set. A column set MUST contain one or more columns.

```
<presentationLink xlink:type="extended"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/column">
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC-B-colset" xlink:label="ffiec041_pres-RC-B-
colset" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC-B" xlink:label="ffiec041_pres-RC-B" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-B" xlink:to="ffiec041_pres-RC-B-colset"
order="1" use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC-B-columnA" xlink:label="ffiec041_pres-RC-B-
columnA" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-B-colset" xlink:to="ffiec041_pres-RC-B-
columnA" order="1" use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0211"
xlink:label="cc_RCON0211" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-B-columnA" xlink:to="cc_RCON0211"
order="1" use="optional" />
```

One of the extended presentation links provides a horizontal view of a form. It would have the role:

https://www.cdr.ffiec.gov/xbrl/report/line

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#report041-65" xlink:label="ffiec041_report041-65" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_report041-RC-B" xlink:to="ffiec041_report041-65"
order="1" use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#RCON0211"
xlink:label="cc_RCON0211" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_report041-65" xlink:to="cc_RCON0211" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#RCON0213"
xlink:label="cc_RCON0213" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_report041-65" xlink:to="cc_RCON0213" order="2"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#RCON1286"
xlink:label="cc_RCON1286" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_report041-65" xlink:to="cc_RCON1286" order="3"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#RCON1287"
xlink:label="cc_RCON1287" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_report041-65" xlink:to="cc_RCON1287" order="4"
use="optional" />
```

Both single column and multi column schedules are represented using line and column extended links. Line extended links contain abstract concepts representing schedules, abstract concepts representing lines (children of schedule abstract concepts), and MDRM concepts (as children of line abstract concepts). Column extended links contain abstract concepts representing schedules, abstract concepts representing column sets (Children of schedule abstract concepts), abstract concepts representing columns (Children of column set abstract concepts) and MDRM concepts (as children of column abstract concepts).

A snapshot of the presentation linkbase line extended link for schedules containing single column:

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC" xlink:label="ffiec041_pres-RC" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-report" xlink:to="ffiec041_pres-RC" order="12"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1561" xlink:label="ffiec041_pres-line-1561" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC" xlink:to="ffiec041_pres-line-1561" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1562" xlink:label="ffiec041_pres-line-1562" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC" xlink:to="ffiec041_pres-line-1562" order="2"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1563" xlink:label="ffiec041_pres-line-1563" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1562" xlink:to="ffiec041_pres-line-1563"
order="1" use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0081"
xlink:label="cc_RCON0081" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1563" xlink:to="cc_RCON0081" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-line-1564" xlink:label="ffiec041_pres-line-1564" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1562" xlink:to="ffiec041_pres-line-1564"
order="2" use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0071"
xlink:label="cc_RCON0071" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-line-1564" xlink:to="cc_RCON0071" order="1"
use="optional" />
```

A snapshot of the presentation linkbase column extended link for schedules containing single column:

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC" xlink:label="ffiec041_pres-RC" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-report" xlink:to="ffiec041_pres-RC" order="12"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC-18-colset" xlink:label="ffiec041_pres-RC-18-colset" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC" xlink:to="ffiec041_pres-RC-18-colset" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_pres-RC-18-column-A" xlink:label="ffiec041_pres-RC-18-column-A"
/>
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-18-colset" xlink:to="ffiec041_pres-RC-18-column-A"
order="1" use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0081"
xlink:label="cc_RCON0081" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-18-column-A" xlink:to="cc_RCON0081" order="1"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON0071"
xlink:label="cc_RCON0071" />
<presentationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
xlink:from="ffiec041_pres-RC-18-column-A" xlink:to="cc_RCON0071" order="2"
use="optional" />
```

Presentation linkbase may contain more than one line or column extended links. An example of this scenario can be found in the FFIEC 031 Call Report, Schedule RC-R for the September 30, 2003 reporting period. Concept RCFD3123 appears on the same row and different columns. This information cannot be represented in a single extended link as it breaks the XLink specification (duplicate arcs between resources are not allowed in XLink). In order to correctly represent this information the presentation linkbase contains more than one line extended links to represent this information. A snapshot of the line extended links which contains the parent-child arcs for the two concepts appearing twice under the same parent:

```
<presentationLink xlink:type="extended"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/line">
   <loc xlink:type="locator" xlink:href="call-report031-2003-09-30-
   v1.xsd#ffiec031_pres-RCR" xlink:label="ffiec031_pres-RCR" />
   <loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCFDB590"
   xlink:label="cc_RCFDB590" />
   <presentationArc xlink:type="arc"
   xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
   xlink:from="ffiec031_pres-RCR" xlink:to="cc_RCFDB590" order="26"
   use="optional" />
   <loc xlink:type="locator" xlink:href="call-report031-2003-09-30-
   v1.xsd#ffiec031_pres-line-2131" xlink:label="ffiec031_pres-line-2131" />
   <loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCFD3123"
   xlink:label="cc_RCFD3123" />
   <presentationArc xlink:type="arc"
   xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
   xlink:from="ffiec031_pres-line-2131" xlink:to="cc_RCFD3123" order="2"
   use="optional" />
</presentationLink>
```

Columns can be explained in the context of a cell that contains different parents. One of the extended links provides the column information. The other extended presentation link provides the row information (abstract elements).

Additional metadata pertaining to columns is contained in the reference linkbase. The reference linkbase provides report, schedule, and line and column information.

2.9.2 Presentation for Dimensional Data

The presentation linkbase will contain additional metadata to represent a form view of dimensional data. This metadata uses the same constructs as that of non dimensional data – line & column extended links. Presentation involving dimensional data shall always have the dimension key displayed on the first column. All subsequent columns in the schedule display the dimensional concept values. The metadata shall contain one dummy line to represent the dimensional information. Users must leverage the reference linkbase in addition to the information in the presentation linkbase to generate a form view of dimensional data. The reference linkbase changes are described in the next section.

For example the summary of deposits taxonomy will contain two schedules, the first schedule captures the breakdown of deposits by branch and the second schedule captures the preparer information.
The column set of the first schedule is tied to 11 columns with one column for every dimensional concept represented on the form. The column set of the second schedule is tied to a dummy column.

Figure 6 shows a representation of the 'Summary of deposits' which includes dimensional data.

- SOD Schedule A
  - Lines
    - Line 1 – All the dimensional concepts are tied to the appropriate line ⇔ columns.
  - Column sets
    - Column Set 1 (branch dimensional data)
      - Columns
        - Column A - Change code (label)
        - Column B - Effective date (label)
        - Column C - Service type (label)

- Column D - Branch name (label)
- Column E - Branch address (label)
- Column F – Branch City (label)
- Column G – Branch State (label)
- Column H – Branch Zip Code (label)
- Column I – Branch County (label)
- Column J - CEN Code (label)
- Column K - Consolidated office (label)
- Column L – Prior year Deposits (label)
- Column M – Deposits (label)
- Column N – Comments (label)

- SOD Schedule B
  - Lines
    - Line 1 – Preparer name
    - Line 2 – Preparer telephone
    - Line 3 – Prepared email
    - Line 4 – Authorized official signature
    - Line 5 – Comments
    - Line 6 – Prepared date
  - Column Set 1 (non-dimensional data)
    - Columns
      - Column A

Figure 6 Presentation Hierarchy depicting dimensional data.

2.10 Calculation Linkbase

The calculation linkbase is used to express simple mathematical relationships between concepts. These relationships can only be summations or subtractions. These relationships MUST not include division, multiplication or If, Then Else constructs. Calculation relationships are based on the context in which a concept is reported, e.g. Cash and Balances due from Depository Institutions for Domestic Offices.

The following example shows two calculations for the same concept. The relationships are based on the context for which the concept is reported:

Calculation for Domestic Offices Only (FFIEC 041)
RCON0010 = RCON0020 + RCON0080 + RCON0083 + RCON0085 + RCON0073 + RCON0074 + RCON0090

Calculation for Domestic Offices (FFIEC 031 Column B)
RCON0010 = RCON0020 + RCON0080 + RCON0082 + RCON0070 + RCON0090

A calculation linkbase contains extended links that expresses inter-concept relationships. For example, there is a relationship between "cash and balances due from depository institutions" and "interest-bearing balances" where "interest-bearing balances" sums up to "cash and balances due from depository institutions". Calculation arcs define how concepts relate to another for calculation purposes. The calculation arcs MUST have the standard arc role:

http://www.xbrl.org/2003/arcrole/summation-item

Figure 3 shows a graphical representation of the calculation linkbase:

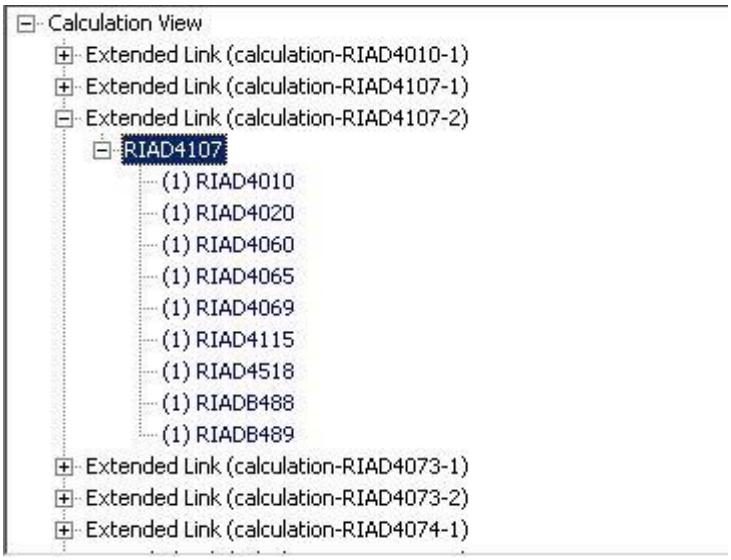


Figure 3 Calculation Linkbase viewed from XBRL development tool

An example of a calculation link:

```
<calculationLink xlink:type="extended"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/calculation3">
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RIAD4074"
xlink:label="cc_RIAD4074" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RIAD4107"
xlink:label="cc_RIAD4107" />
<calculationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/summation-item"
xlink:from="cc_RIAD4074" xlink:to="cc_RIAD4107" order="1" weight="1"
use="optional" />
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RIAD4073"
xlink:label="cc_RIAD4073" />
<calculationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/summation-item"
xlink:from="cc_RIAD4074" xlink:to="cc_RIAD4073" order="2" weight="-1"
use="optional" />
</calculationLink>
```

The above calculation represents the following relationship between the concepts:
'RIAD4074 = (RIAD4107 - RIAD4073)'.

Note: There are no changes to the calculation linkbase for taxonomies that involve dimensions.

2.11 Reference Linkbase

The reference linkbase is used to contain the relationship between a concept (both MDRM and abstract presentation concepts) with a resource element (that contains the report name, schedule name, line number and column name). Reference linkbase MUST contain a single extended link to capture these relationships. A 'locator' element is used to point to the elements in the corresponding core schema, a 'reference' element

to contain the report, schedule, line and column information, a 'referenceArc' to relate elements to the resource. The arc role attribute on the 'referenceArc' element MUST be set to:

https://www.cdr.ffiec.gov/xbrl/report/form

Each resource element contains at most four child elements based on the substitution group 'part' (which are defined in the Core taxonomy schema).

A snapshot of the reference linkbase shows a reference element that contains 'part' information, 'locator' to the concept and a 'referenceArc' connecting the two.

```
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON5339"
xlink:label="cc_RCON5339" />
<reference xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
xlink:label="cc_RCON5339_A_ref">
  <ffiec041:report>report041</ffiec041:report>
  <ffiec041:schedule>RCR</ffiec041:schedule>
  <ffiec041:line>42</ffiec041:line>
  <ffiec041:column>F</ffiec041:column>
  </reference>
<referenceArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
xlink:from="cc_RCON5339" xlink:to="cc_RCON5339_A_ref" use="optional" />
```

When a concept appears in multiple schedules, the reference linkbase MUST contain a reference element for each occurrence. A snapshot of the reference linkbase which shows a concept containing multiple reference parts:

```
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCON2170"
xlink:label="cc_RCON2170" />
<reference xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
xlink:label="cc_RCON2170_A_ref">
  <ffiec041:report>report041</ffiec041:report>
  <ffiec041:schedule>RC</ffiec041:schedule>
  <ffiec041:line>12</ffiec041:line>
  </reference>
<referenceArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
xlink:from="cc_RCON2170" xlink:to="cc_RCON2170_A_ref" use="optional" />

<reference xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
xlink:label="cc_RCON2170_B_ref">
  <ffiec041:report>report041</ffiec041:report>
  <ffiec041:schedule>RCR</ffiec041:schedule>
  <ffiec041:line>43</ffiec041:line>
  <ffiec041:column>A</ffiec041:column>
  </reference>
<referenceArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
xlink:from="cc_RCON2170" xlink:to="cc_RCON2170_B_ref" use="optional" />
```

Reference linkbase in taxonomies with dimensional data will have an additional reference part to capture the dimension information. All dimensional concepts MUST contain a new reference part – dimension as illustrated below.

```
<loc xlink:type="locator" xlink:href="sod-report-2015-06-30-
    v1.xsd#sod_pres-ScheduleA" xlink:label="sod_pres-ScheduleA " />
<referenceArc xlink:type="arc"
    xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
    xlink:from="sod_pres-ScheduleA" xlink:to="sod_pres-ScheduleA_ref_126"
    />
<reference xlink:type="resource"
    xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
    xlink:label="sod_pres-ScheduleA_ref_126">
  <sod:report>Report001</sod:report>
  <sod:schedule>ScheduleA</sod:schedule>
</reference>

<loc xlink:type="locator" xlink:href="concepts.xsd#sc_SUMDG954"
    xlink:label="sc_SUMDG954" />
<referenceArc xlink:type="arc"
    xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
    xlink:from="sc_SUMDG954" xlink:to="sc_SUMDG954_ref_108" />
<reference xlink:type="resource"
    xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
    xlink:label="sc_SUMDG954_ref_108">
  <sod:report>Report001</sod:report>
  <sod:schedule>ScheduleA</sod:schedule>
  <sod:line>1</sod:line>
  <sod:column>10</sod:column>
  <sod:dimension>branch</sod:dimension>
</reference>
```

Reference linkbase in taxonomies with columns that show prior period data will have an additional reference part to capture the special column details. For example the SOD report displays the prior period branch deposits next to the current period branch deposits. This is represented in the reference linkbase as illustrated below.

```
<loc xlink:type="locator" xlink:href="concepts.xsd#sc_RCON2200"
    xlink:label="sc_RCON2200" />
<referenceArc xlink:type="arc"
    xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-reference"
    xlink:from="sc_RCON2200" xlink:to="sc_RCON2200_ref_98" />
<reference xlink:type="resource"
    xlink:role="https://www.cdr.ffiec.gov/xbrl/report/form"
    xlink:label="sc_RCON2200_ref_98">
  <sod:report>Report001</sod:report>
  <sod:schedule>ScheduleA</sod:schedule>
  <sod:line>1</sod:line>
  <sod:column>12</sod:column>
  <sod:columnExpression>[-P1Y]</sod:columnExpression>
  <sod:dimension>Branch</sod:dimension>
</reference>
```

2.12 Edits

Edits are expressed using the formula linkbase. All validity and quality edits MUST be expressed in the formula linkbase. All Validity edits MUST pass. Unlike validity edits, all quality edits MAY NOT pass and any failures MUST include a standard explanation code and explanatory text.

An example of validity edit for total assets:

Form Information			FFIEC Standardized Validation Information				
Concept Name (*MDRM*)	**Line Reference Number**	**Concept Label**	**Type**	**Number**	**Description**	**Description Using Line Reference Numbers**	**Boolean Expression Using the MDRM**
RCON2170	RC-12	total assets	v	2040	total assets should equal the sum of the assets on the balance sheet	Sum of (RC-1a through RC-4a and RC-4d through RC-11) must = RC-12	((cc:RCON0081[P0] + cc:RCON0071[P0] + cc:RCON1754[P0] + cc:RCON1773[P0] + cc:RCONB987[P0] + cc:RCONB989[P0] + cc:RCON5369[P0] + cc:RCONB529[P0] + cc:RCON3545[P0] + cc:RCON2145[P0] + cc:RCON2150[P0] + cc:RCON2130[P0] + cc:RCON2155[P0] + cc:RCON3163[P0] + cc:RCON0426[P0] + cc:RCON2160[P0]) = cc:RCON2170[P0])

The edit states that total assets should be the sum of the Schedule RC Balance Sheet or the sum of RC-1a through RC-4a and RC-4d through RC-11. Placing this edit into a calculation link will make the edit implicit. There are no longer any unique edit identifiers for calculation links. Tolerances MUST NOT be utilized in calculation links.

Example of a validity edit that is not a simple summation:

Form Information			FFIEC Standardized Validation Information				
Concept Name (*MDRM*)	**Line Reference Number**	**Concept Label**	**Type**	**Number**	**Description**	**Description Using Line Reference Numbers**	**Boolean Expression Using the MDRM**
RCON2170	RC-12	total assets	v	2042	total assets must be greater than 0	RC-12 must be > 0	(cc:RCON2170 > 0)

The validity edit states that total assets must be greater than zero or RC-12 must be greater than zero. Placing a validity edit in a formula linkbase does NOT make the edit implicit. A validity edit in a formula MUST have unique identifier, but does NOT require a predefined error or text message. Validity edits in a formula MUST pass before submission to CDR.

Validity edits in the formula linkbase are identified by using the role attribute on the formula resource:

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType1"
xlink:label="R6790.3628_formula" select="if( cc:RCON2710[P0] >
0,cc:RCON5597[P0] > 0,TRUE)" />
```

Quality edits in the formula linkbase are identified by the role attribute on the formula resource:

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="R0791.3599_formula"
select="((cc:RIADC435[P0])+(cc:RIADC390[P0]))<=(cc:RIAD3123[P0])" />
```

An edit MUST NOT execute if any of the concepts involved in the edit are missing. Reportability rules MAY be used to determine if a required concept is missing.

2.12.1 Formula Linkbase

All quality and validity edits will be contained in a formula linkbase. The core schema will contain element names for formula expressions and the formula expressions will be contained in a formula linkbase. Formulas can refer to results of other formulas in the current document by the taxonomy prefixed name of the element which has that formula.

An example of a rule definition in the core schema file:

```
<element name="R0401.2073" id="ffiec041_R0401.2073"
type="xbrli:booleanItemType" substitutionGroup="xbrli:item"
nillable="true" xbrli:periodType="instant" />
```

A formula linkbase contains extended links of mathematical formulas to express business rules. Such business rules are consistency and equality checks across a single or multiple time periods. The formula linkbase will also contain items to identify current period, prior periods and/or multiple periods.

An example of declaring period information in the formula linkbase:

```
<absoluteContext id="P0" xlink:title="Absolute reference to the current
quarter" xlink:type="resource">
   <periodConstraint>
     <instantConstraint year="2003" month="09" day="30" />
   </periodConstraint>
</absoluteContext>
```

A formula linkbase MUST contain a single extended link to contain all the formulae. A 'locator' element is used to point to the elements in the core schema, a 'formula' resource element to express the formula, a 'formulaArc' to relate elements to the resource. The arc role attribute on the 'formulaArc' element MUST have the following value:

https://www.cdr.ffiec.gov/2003/arcrole/concept-formula

The 'xlink:role' attribute on the formula resource element MUST have either of the following two values depending on the type of formula.

https://www.cdr.ffiec.gov/xbrl/rule/ruleType1

https://www.cdr.ffiec.gov/xbrl/rule/ruleType2

There are two types of rule expressions, one that has a pre-condition and one that does not.

An example of a rule expression that does not have a pre-condition:

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_R0401.2073" xlink:label="ffiec041_R0401.2073" />
<formulaArc xlink:type="arc"
xlink:arcrole="https://www.cdr.ffiec.gov/2003/arcrole/concept-formula"
xlink:from="ffiec041_R0401.2073" xlink:to="R0401.2073_formula" />
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="R0401.2073_formula" select="(cc:RIAD4150[P0] > 0)" />
```

The above example expresses the rule - RIAD4150, for the current period (P0) must be greater than zero. The rule passes if the expression in the select attribute evaluates to 'TRUE'. Otherwise it fails and an edit explanation code and text MUST be included in the instance document.

An example of a rule expression that has a pre-condition:

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_R0125.2019" xlink:label="ffiec041_R0125.2019" />
<formulaArc xlink:type="arc"
xlink:arcrole="https://www.cdr.ffiec.gov/2003/arcrole/concept-formula"
xlink:from="ffiec041_R0125.2019" xlink:to="ffiec041_R0125.2019_formula" />
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="ffiec041_R0125.2019_formula" select="If(
(MonthOf(Context.Period.EndDate) <> 3) And ((cc:RIAD9106[P0] <= cc:RIAD9106[-
P1Q])),(cc:RIAD4011[P0] >= (cc:RIAD4011[-P1Q] - 2000)), (cc:RIAD4011[P0] >=
(cc:RIAD4011[-P1Q] - 5000)))" />
```

The expression can be interpreted as follows:

```
if (Month not equal to 3) AND(cc:RIAD9106[P0] <= cc:RIAD9106[-P1Q])
then (cc:RIAD4011[P0] >= (cc:RIAD4011[-P1Q] - 2000))
else (cc:RIAD4011[P0] >= (cc:RIAD4011[-P1Q] - 5000))
```

Case1: If the precondition passes, then the primary expression is evaluated. The rule passes if the primary expression evaluates to 'TRUE'. The rule fails if the primary expression evaluates to 'FALSE' and an edit code and explanation text MUST be supplied for the failed rule in the instance document.

Case2: If the precondition fails then the secondary expression is evaluated. The rule passes if the secondary expression evaluates to 'TRUE'. The rule fails if the secondary expression evaluates to 'FALSE' and an edit code and explanation text MUST be supplied for the failed rule in the instance document.

Note: The following is also a valid example of a rule expression that has a pre-condition, in this case if the pre-condition fails the rule passes as the secondary expression evaluates to 'TRUE':

If (cc:RCONF049[-P1Q] > 0, cc:RCONF049[P0] > 0, TRUE)

Note: The structure of the formula linkbase does not change to incorporate dimensions; all the rules for interpreting the formula linkbase content remain the same.

2.13 Formula Grammar

There are three key components concerning formula used in CDR. They are operators, logical functions and date functions

2.13.1 Operators

There are three types of operators:

Arithmetic Operator: = "+" | "-" | "*" | "/"

Comparison Operator: = "<=" | "=<" | "=>" |">=" | "<" | ">" | "<>" | "="

Other Operator: = "[…]" (relative-reference) | "&" (delimiter)

Additional explanation of operators follows:

Arithmetic operators perform basic mathematical operations such as addition, subtraction, or multiplication; combine numbers; and produce numeric results.

Arithmetic operator	**Meaning**	**Example**
+ (plus sign)	Addition	3+3
- (minus sign)	Subtraction	3-1
-	Negation	-1
* (asterisk)	Multiplication	3*3
/ (forward slash)	Division	3/3

Comparison operators compare two values and then produce the boolean value 'true' or 'false'.

Comparison operator	**Meaning**	**Example**
= (equal sign)	Equal to	A1=B1
> (greater than sign)	Greater than	A1>B1
< (less than sign)	Less than	A1<B1
>= (greater than or equal to sign)	Greater than or equal to	A1>=B1
<= (less than or equal to sign)	Less than or equal to	A1<=B1
<> (not equal to sign)	Not equal to	A1<>B1

Other Operators

Other Operators	**Meaning**	**Example**
[(relative reference)]	Relative Reference operator, which designates a relative context expression, or a name of an absolute or relative context resource to apply to this element.	ci:Land[-P1Y] is the value of the ci:Land fact of the preceding-year's context
"&"	Generates a string concatenation	'(RI-1H MINUS RI-2E) MUST

of two expressions: *result = expression1 & expression2* **result** -Required. Any String or Object variable. **expression1** -Required. Any expression with a data type that widens to String. **expression2**-Required. Any expression with a data type that widens to String. **string** Any text string enclosed in Single quote or apostrophe. For example - 'This is a string'. *Note:* String can have special characters using the CHAR(num_code) syntax. e.g. For apostrophe: 'This is Bank' & CHAR(39) & 's data'	EQUAL NET INTEREST INCOME (RI-3)||Sum = ' & (cc:RIAD4107[P0] - cc:RIAD4073[P0]) & ' ; Reported = ' & cc:RIAD4074[P0] & ' ; Difference = ' & cc:RIAD4074[P0] - (cc:RIAD4107[P0] - cc:RIAD4073[P0])

Formula grammar contains cross context expressions that aid in filtering concepts:

Context expressions

A context expression consists of two parts – relative period-offset expression and an optional dimensional expression.

The context expression BNF is

[<*Relative period-offset expression*><, *Dimension Expression*>]

Relative period-offset expressions use the XBRL/XML period expression. The expression ci:Land[-P1Y] means that the formula will execute if the ci-prefixed Land-named element has a fact value one year earlier than the formula's execution context, and will utilize the previous year's value for this expression term. The Relative period-offset BNF is:

<Direction><P><Amount><Period></><RelativeContextDatePart>

Direction: " " | "-"

Amount : integers 1-31

Period : "Y" | "Q" | "M" | "D"

RelativeContextDatePart: "-Month-Day"*

* "-end" can be used to designate the last day of any given month if you don't want to specify 30 or 31 days

Relative period offset operators:

Operator	Meaning	Example
“” (Null)	No value supplied	[P1Y] Forward one year
- (minus sign)	Minus	[-P1Y] Back one year
“Y”	Year	[-P1Y] Back one year
“Q”	Quarter	[-P1Q] Back one Quarter
“M”	Month	[-P1M] Back one Month
“D”	Day	[-P1D] Back one Day
“01-01”	First Month First Day	[-P1Y/-01-01]
“01-end”	First Month Last Day	[-P1Y/-01-end] **
“01”	First Month Current Day	[-P1Y/-01]

Examples:

The following formula evaluates to true if the value of ‘RCON2170’ in the current period is not equal to the value of ‘RCON2170’ in the prior quarter.

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="ffiec031_R1070.2203_formula" select="cc:RCON2170[P0] <>
cc:RCON2170[-P1Q]" />
```

** Note: The reference operator of the format “[month]-end” would be constrained by restricting the value of month to be one of the following {3, 6, 9, 12} which correspond to the various quarters in which Call Reports are collected.

Example: ‘cc:RCON2170 [-P1Y/-06-end]’ refers to the value of ‘RCON2170’ in the prior year and June quarter.

Dimension Expression provides for a way to reference the dimension information located in the context element of an instance document.

The dimension expression BNF is

Context.Scenario.<*Dimension Name*>

Examples:

The following validity edit checks for any negative “Deposits Concepts” reported across the branch dimension.

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType1"
xlink:label="sod_SOD1.0002_formula" select="sc:RCON2200[P0,
Context.Scenario.Branch] >= 0" />
```

This following validity edit checks if the call deposits value is equal to the sum of branch deposits.

```
<formula xlink:type="resource"
```

```
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType1"
xlink:label="sod_SOD1.0003_formula" select="cc:RCON2200[P0] =
SUM(sc:RCON2200[P0, Context.Scenario.Branch])" />
```

The following quality edit evaluates to "False" if the address of any branch is not valid. CDR geo codes the address to determine if it is a valid one.

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="sod_SOD1.0004_formula" select=" IsValidAddress(sc:SUMD9010[P0,
Context.Scenario.Branch], sc:SUMD9028[P0, Context.Scneario.Branch],
sc:SUMD9130[P0, Context.Scneario.Branch], sc:SUMD9200[P0,
Context.Scneario.Branch], sc:SUMD9220[P0, Context.Scneario.Branch],
sc:SUMD9160[P0, Context.Scneario.Branch])" />
```

Finally, the dimension expression could be used outside of a context reference. The following validity edit evaluates to "False" if any of the dimension members have a dimension key (Office number) of '0'.

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType1"
xlink:label="sod_SOD1.0005_formula"
select="Context.Scenario.Branch > 0" />
```

Named absolute context resource

Named absolute context resources allow specification of constraints on start-date, end-date, and instant-date. Named absolute context resources can be defined once and used many times in the formulas of a given formula linkbase. They are stored in the formula linkbase. It provides constraints on entity, scenario, and tuple along with period.

Example:

Following is the definition of a named absolute context resource in the formula linkbase, which refers to the period '2003-09-30'.

```
<absoluteContext id="P0" xlink:title="Absolute reference to the
current quarter" xlink:type="resource">
     <periodConstraint>
        <instantConstraint year="2003" month="09" day="30" />
     </periodConstraint>
</absoluteContext>
```

An example of a formula that uses a named absolute context resource to refer to the period '2003-09-30':

```
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType1"
xlink:label="ffiec031_R0170.1030_formula" select="((cc:RIAD4074[P0] -
(cc:RIAD4107[P0] - cc:RIAD4073[P0])) <= 1000) And ((cc:RIAD4074[P0] -
(cc:RIAD4107[P0] - cc:RIAD4073[P0])) >= -1000)" />
```

2.13.2 Pre-binding and context functions

Functions	Number of input parameters	Description	Syntax
Exists	1	Returns True/False based on the pre-binding value of the instance document fact for the current context. Will return True when the Fact value is nil only if the Nilable attribute is set true	Exists(prefix:<conceptname>)
ExistsNonNil	1	Returns True/False based on the pre-binding value of the instance document fact for the current context. Will return True only if the Fact has a reported value regardless of the XBRL Nilable attribute	ExistsNonNil (TotalAssets)
ExistsNonEmpty	1	Returns True/False based on the pre-binding value of the instance document fact for the current context. Will return True only if the Fact has a reported value and is non empty	ExistsNonEmpty (TotalAssets)
ExistingOf	<1 or more>	Returns the first found value in the list of arguments. If no arguments bind the function returns no value and the entire expression will fail to bind	ExistingOf(TotalAssets, '0')

Functions		Number of input parameters	Description
Context.Period.Type	0	The current context's type (e.g., "Instant"), as a string.	
Context.Period.StartDate, Context.Period.EndDate	0	The current context's start and end dates (or instant date), as a date-time type.	
SumOfAll	1	This function returns the sum of all values found for the specified concept and evaluated context.	SumOfAll(<prefix>:<conceptName>[<context Expression])

2.13.3 Date functions

Functions	Number of input parameters	Description	Syntax

YearOf	1	The Year function returns a four-digit year (a number from 1900 to 9999) given a date value.	Year(date_value) date_value is a valid date.
MonthOf	1	The Month function returns the month (a number from 1 to 12) given a date value.	Month(date_value) date_value is a valid date.
DayOf	1	Returns the day of the month (a number from 1 to 31) given a date value.	Day(date_value) date_value is a valid date.
DateToString	2	Returns the string formatted date as specifed by the second argument (C# date format)	DateToString(Date, DateFormat) eg. DateToString(Context.Period.EndDate, 'yyyyMMDD')
DateValue	1	Returns the serial number of a date.	
Date	3	returns the date	Date(year, month, day) year is a number that is between one and four digits. If the year is between 0 and 1899, the year value is added to 1900 to determine the year. If the year is between 1900 and 9999, the Date function uses the year value as the year. If the year is greater than 9999, the Date function will return the #NUM! error. month is a number representing the month value. If the month value is greater than 12, the Date function adds that number of months to the first month of the year specified in the year parameter. day is a number representing the day value. If the day value is greater than the number of days in the month specified, the Date function add that number of days to the first day in the month specified in the month parameter.

2.13.4 Math functions

Functions	Number of input parameters	Description	Syntax

Abs	1	The Abs function returns the absolute value of the argument	Abs(number1)
Round	1	The Round funciton rounds to nearest integer	Round(number1)
Truncate	1	truncates the number	Truncate(decimalnumber1)
Trunc	1	same as Truncate	
Int	1	Converts the input to a string. And also truncates if required.	Int('1234') = 1234
Sqrt	1	returns the Square root of the argument with (base 2)	Sqrt(number)
Min	2	returns the minimum of the two numbers	Min(number1, number2) returns number1 if number1 < number2
Max	2	returns the maximum of the two numbers	Max(number1, number2) returns number1 if number1 > number2
Sign	1	returns -1 if the number is negative, else returns 1	Sign(number1)
Power	2	The Power function returns the result of a number raised to a given power.	Power(number, power) number is a base number. power is the exponent used to raise the base number to.
Avg	<1 or more>	The Avg Functions returns the avg of the numbers provided as arguments	Avg(n1, n2, n3, ….. Nn)

2.13.5 String Functions

Functions	Number of input	Description	Syntax

	parameters		
Len	1	The Len function returns the length of the specified string. (in, or converted to, string type).	Len(<text or Value>)
Left	2	The Left function allows you to extract a substring from a string, starting from the left-most character.	Left(text, number_of_characters) text is the string that you wish to extract from (string conceptname, function that returns a string) number_of_characters indicates the number of characters that you wish to extract starting from the left-most character.
Right	2	The Right function extracts a substring from a string starting from the right-most character	Right(text, number_of_characters) text is the string that you wish to extract from (string conceptname, function that returns a string) number_of_characters indicates the number of characters that you wish to extract starting from the right-most character.
Concatenate	2	The Concatenate function allows you to join 2 strings together. Similar to &	concatenate(string1, string2)
Mid	3	The Mid function extracts a substring from a string (starting at any position).	Mid(text, start_position, number_of_characters) text is the string that you wish to extract from. start_position indicates the position in the string that you will begin extracting from. The first position in the string is 1. number_of_characters indicates the number of characters that you wish to extract
Trim	1	The Trim function returns a text value with the leading and trailing spaces removed.	Trim(text) text is the text value to remove the leading and trailing spaces from.
Replace	3 or 4		
Substitute	3 or 4	The Substitute function replaces a set of characters with another.	Substitute(text, old_text, new_text, nth_appearance) text is the original string to use to perform the substitution. old_text is the existing characters to

			replace. new_text is the new characters to replace old_text with. nth_appearance is optional. It is the nth appearance of old_text that you wish to replace. I f this parameter is omitted, then every occurrence of old_text will be replaced with new_text
Search	2	The Search function returns the location of a substring in a string. The search is NOT case-sensitive.	Search(text1, text2) text1 is the substring to search for in text2. text2 is the string to search.
Exact	2	The Exact function compares two strings and returns TRUE if both values are the same. Otherwise, it will return FALSE.	Exact(text1, text2) text1 and text2 are the values to compare. The Exact function is case-sensitive
Upper	1	The Upper function converts all letters in the specified string to uppercase. If there are characters in the string that are not letters, they are unaffected by this function	Upper(text1)
Lower	1	The Lower function converts all letters in the specified string to lowercase. If there are characters in the string that are not letters, they are unaffected by this function	Lower(text1)
Proper	1	The Proper function sets the first character in each word to uppercase and the rest to lowercase.	Proper(text1)
Value	1	The Value function converts a text value that represents a number to a number.	Value(text1) text1 is the string that represents number

2.13.6 Special Functions

Functions	Number of input parameters	Description	Syntax
IsValidAddress	5	The IsValidAddress function returns true if the input address is a valid.	IsValidAddress(string branchName, string streetAddress1, string city, string state, string zip, string county)
ValidateBranchStructureData	0	The ValidateBranchStructureData function returns true if the reported branch structure data is valid.	ValidateBranchStructureData()

Note: The ValidateBranchStructureData function returns true if both of the following conditions are met

- SOD data is reported for all branches in CDR. All removed branches must be reported using appropriate change codes.
- Instance document has new branch information that is not in CDR and appropriate change code is used to reflect the new branch.

2.13.7 Operator precedence

All expression parsing is left to right given precedence considerations. If operators have same precedence, they are handled in lexical order, e.g., left to right.

Precedence	Operators
Highest	Infix operators, '-' (negate)
	Exponentiation: '^'
	Multiply, divide: '*', '/'
	Add, subtract: '+', '-'
	Concatenate: '&'
	Comparison: '>=', '<=', '>'. '<'
	Equality: '=', '<>'
	Xor
	And
	Or
Lowest	Union, parentheses, function terms: '(', ',', ')'

Table 9 – Precedence

Arithmetic involving strings containing numbers should be converted to floating point. Booleans are converted to zero or one (false or true) if mixed in arithmetic expression terms. Date-time expressions may be compared to each other, but do not convert into arithmetic units (one must use a function to extract arithmetic-suitable days, hours, etc, from a date-time field).

2.14 Edit Codes and Explanation Text

A reporting institution's data is constrained by a set of rules defined by the regulatory agencies. If the rules fail criteria, a predefined error code and an explanation MUST accompany the data in order for the instance to be valid.

For every quality edit, the regulatory agencies assign a set of acceptable error codes. Explanation codes definitions are contained in the core schema. Explanation code is a new item type derived by restriction from the base XBRL data type – integerItemType.

An example of an error code definition in the core schema:

```
<complexType name="R3857.1510_ExplanationCodeItemType">
  <simpleContent>
     <restriction base="xbrli:integerItemType">
       <enumeration value="1">
         <annotation>
     <documentation>Accounting Corrections or Adjustments</documentation>
      </annotation>
     </enumeration>
       <enumeration value="2">
          <annotation>
            <documentation>Normal fluctuation</documentation>
           </annotation>
     </enumeration>
       <enumeration value="3">
          <annotation>
           <documentation>Merger Activity</documentation>
       </annotation>
       </enumeration>
       <enumeration value="4">
         <annotation>
            <documentation>Denovo Activity</documentation>
         </annotation>
     </enumeration>
    </restriction>
  </simpleContent>
</complexType>

<element id="ffiec031_R3857.1510_ExplanationCode"
name="R3857.1510_ExplanationCode" type="
ffiec031:R3857.1510_ExplanationCodeItemType" substitutionGroup="xbrli:item"
nillable="true" xbrli:periodType="instant" />
```

For every quality edit that fails, the institutions must provide a text explanation in the instance document.

Text explanation is defined as string data type in the core schema.

```
<element name="R0401.2073_ExplanationText"
id="ffiec041_R0401.2073_ExplanationText" type="xbrli:stringItemType"
substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant" />
```

Example Instance document in the case where financial institution fails SampleEdit1 and it chooses the edit explanation code '1' as the reason.

```
<ffiec041-2003-09-30:R0401.2073_ExplanationCode
contextRef="CI_222222_2003-09-30" unitRef="NON-MONETARY"
decimals="0">1</ffiec041-2003-09-30:R0401.2073_ExplanationCode>

<ffiec041-2003-09-30:R0401.2073_ExplanationText
contextRef="CI_222222_2003-09-30">this is my free form text explanation.
</ffiec041-2003-09-30:R0401.2073_ExplanationText>
```

Example Instance document in the case where financial institution fails SampleEdit1 and it chooses the edit explanation code '17' as the reason.

```
<ffiec041-2003-09-30:R0401.2073_ExplanationCode
contextRef="CI_222222_2003-09-30" unitRef="NON-MONETARY"
decimals="0">17</ffiec041-2003-09-30:R0401.2073_ExplanationCode>

<ffiec041-2003-09-30:R0401.2073_ExplanationText
contextRef="CI_222222_2003-09-30">The dog ate my Call Report.
</ffiec041-2003-09-30:R0401.2073_ExplanationText>
```

2.15 Formula Messages Linkbase

Each edit has one or more formula messages associated with it. This information is captured using a label linkbase. The label linkbase has one extended link with locators to the edits involved, resources for the edit messages and arc's to connect the edit messages to the edits.

Formula messages are identified by the role attribute on the label resource. There will be two formula message roles. Both the messages have sub expressions for further evaluation. These sub expressions use the '&' character before and after the expression as a delimiter.

There are two types of formula messages, they are referred to as rule message type 1 and rule message type 2. Rule message type 1 identifies formula messages that contain a 'short' description using line reference numbers and sub expressions. A '||' character is used as delimiter to separate the short description from the sub expressions.

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_R3680.3027" xlink:label="ffiec041_R3680.3027" />
<label xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleMessage1" xlink:label="
ffiec041_R3680.3027_msg ">IF (RC-B7C - B7D) >=0, THEN (RC-R3) MUST BE <=
(RC-B7C - B7D)||(RC-R3) = $'&amp; cc:RCFDA221[P0] &amp;  (RC-B7C -B7D) = $'
&amp;(cc:RCFDA510[P0]) - (cc:RCFDA511[P0]) &amp; '.
</label>
<labelArc xlink:type="arc" xlink:from="ffiec041_R3680.3027"
xlink:to="ffiec041_R3680.3027_msg"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label" />
```

Rule message type 2 identifies formula messages that contain a 'long' English description using line reference numbers and sub expressions.

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_R3680.3027" xlink:label="ffiec041_R3680.3027" />
<label xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleMessage2"
xlink:label="ffiec041_R3680.3027_msg"> 'The amount of Net unrealized loss on
available-for-sale equity securities (RC-R3) $' &amp; cc:RCFDA221[P0] &amp;
'should be less than or equal to the amount of Unrealized loss on available-
for-sale equity securities (RC-B7, columns C minus D) $'
&amp;(cc:RCFDA510[P0]) - (cc:RCFDA511[P0]) &amp; '.  Please revise.'
</label>
<labelArc xlink:type="arc" xlink:from="ffiec041_R3680.3027"
xlink:to="ffiec041_R3680.3027_msg"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label" />
```

Edits involving dimensions would also be associated to messages in a similar fashion. There are no

structural changes to the formula message linkbase in order to support dimensions.

```
<loc xlink:type="locator" xlink:href="sod-report-2015-06-30-
    v1.xsd#sod_SOD1.0001" xlink:label="sod_SOD1.0001" />
<labelArc xlink:type="arc"
    xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
    xlink:from="sod_SOD1.0001" xlink:to="sod_SOD1.0001_lbl_4467" />
<label xlink:type="resource"
    xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleMessage1"
    xlink:label="sod_SOD1.0001_lbl_4467" xml:lang="en">'Sum of all Branch
    deposits must be equal deposits by bank.'</label>
<labelArc xlink:type="arc"
    xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
    xlink:from="sod_SOD1.0001" xlink:to="sod_SOD1.0001_lbl_4468" />
<label xlink:type="resource"
    xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleMessage2"
    xlink:label="sod_SOD1.0001_lbl_4468" xml:lang="en">'Sum of all Branch
    deposits must be equal deposits by bank.'</label>
```

2.16 Negative Items

All numeric concepts fall into one of the following three categories. They are numeric concepts that MUST NOT have a negative value, Numeric concepts that normally have positive values and may have a negative value, and Numeric concepts that can have any value.

Numeric concepts that MUST not have a negative value:

These concepts MUST be assigned to data types that restrict their values. 'xbrli:nonNegativeIntegerItemType', 'ffieci:nonNegativeMonetaryItemType' and 'ffieci:nonNegativeDecimalItemType' are the data types that restrict integers, monetary values and decimals to the positive range. A financial institution MUST submit positive values for all the concepts in this category. The instance document is not valid if any of these concepts have a negative value.

RCON2170 – Total Assets is an example of a monetary concept that MUST NOT have a negative value. The data type on the concept definition restricts it's values to be zero or positive.

```
<element name="RCON2170" id="cc_RCON2170"
type="ffieci:nonNegativeMonetaryItemType" substitutionGroup="xbrli:item"
nillable="true" xbrli:periodType="instant" xbrli:balance="debit" />
```

Numeric concepts that normally have positive values and MAY not have negative values:

There are situations where certain institutions may report a negative value for a concept that is normally positive. For these concepts a **quality** or **validity** edit is applied. Edits for negative items are expressed only in the formula linkbase and follow the same rules as stated in Section 2.9. The following is an example of a negative item edit for Other Assets (RCON2160).

```
<loc xlink:type="locator" xlink:href="call-report041-2003-09-30-
v1.xsd#ffiec041_R0125.2019" xlink:label="ffiec041_R0125.2019" />
<formulaArc xlink:type="arc"
xlink:arcrole="https://www.cdr.ffiec.gov/2003/arcrole/concept-formula"
xlink:from="ffiec041_R0125.2019" xlink:to="R0125.2019_formula" />
<formula xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rule/ruleType2"
xlink:label="R0125.2019_formula" select="cc:RCON2160[P0] >= 0" />
```

Numeric concepts that can have any value:

An example of this type of numeric concept is RIAD4340—Net Income (loss). There is no special data type or quality edit to handle this category of concepts.

```
<element id="cc_RIAD4340" name="RIAD4340" type="xbrli:monetaryItemType"
substitutionGroup="xbrli:item" xbrli:periodType="duration"
xbrli:balance="credit" />
```

3. Reportability Rules Taxonomy

3.1 Business Purpose

Financial Institutions (FI) file reports with FFIEC agencies containing concept values that indicate the financial status of that FI for a reporting period. Business Rules specified by the FFIEC determine whether a concept is to be reported by a FI. The Reportability Rules taxonomy provides a simple and efficient way for a software application to programmatically determine the set of concept values that MUST be reported for a particular FI.

3.2 Definition

Reportability Concept

Reportability Concepts define the organizational detail and operating status (structure) for a financial institution. The values for these concepts determine ***which*** financial concepts a FI should report, and ***when*** the report is due. Reportability Concepts are not collected on the Report form. There will be no presentation for Reportability Concepts. The MDRM definitions will be captured in the concepts schema file (*concepts.xsd).* The concept values are "true/false" or numerical responses to specific questions about an institution's structure and relate directly to Report instructions concerning which concepts a FI should report. There are two types of Reportability Concepts – Structure and StructureVendor.

Reportability Concept – Structure:
CDR calculates the values for these concepts at quarter-end from the Federal Reserve structural database (NIC), previous quarter reportability rule concepts and from previously reported Report information.

There are several Reportability Concepts that are integers representing the number of foreign offices currently open (RCONC591, RCONC595, and RCONC597). Counts of foreign offices are NOT used in any reportability rules (formula), but are available as data concepts for collecting necessary information as to whether the institution qualifies for the 15 day extension.

There are four Reportability Concepts that are subsets (or further breakdowns) of summary concepts. RCONC594 and RCONC596 are subsets of the summary concept RCONC590. Similarly, RCONC595 and RCONC597 are subsets to the summary concept RCONC591. **Of these, only the summary concept**

RCONC590 is used in the reportability rules. As stated earlier, RCON591 is a count of foreign offices and is not needed to process reportability edits. The logic of subset concepts is that if either RCONC594 or RCONC596 is true, then RCONC590 must be true. Likewise RCONC595 plus RCONC597 should equal RCONC591 and can be used to determine Call Report delinquency.

At initial implementation, the CDR's reportability rules will use the following seven reportability concepts for the call data series: **RCONA901, RCONC587, RCONC588, RCONC590, RCONC592, RCONC593, and RCONC695.** If any one of these concepts is missing, reportability rules assume a default value of "false" for the concept. If all seven are missing, the reportability rules will execute in CDR as if the bank were a small institution (less that $100,000 in assets) filing a FFIEC 041 form.

Reportability Concept	Long Caption
RCONA901	DURING THE CALENDAR QUARTER, DID THE INSTITUTION ACQUIRE ASSETS OR LIABILITIES THROUGH A BUSINESS COMBINATION OR BRANCH ACQUISITION, OR DID THE INSTITUTION COMMENCE BUSINESS AS A NEW INSTITUTION?
RCONC587	AT ANY TIME DURING THE CALENDAR YEAR, DID THE INSTITUTION HAVE AN INTERNATIONAL BANKING FACILITY (IBF) ESTABLISHED IN ACCORDANCE WITH THE TERMS OF FEDERAL REGULATION D?
RCONC588	ANY TIME DURING CALENDAR YEAR, DID THE INSTITUTION HAVE AN EDGE OR AGREEMENT CORPORATION ORGANIZED UNDER SECTION 25 OF THE FEDERAL RESERVE ACT AND SUBJECT TO FEDERAL REGULATION K?
RCONC589	WHAT IS THE NUMBER OF EDGE OR AGREEMENT CORPORATIONS OWNED BY THE INSTITUTION AS OF THE REPORT DATE?
RCONC590	DID INSTITUTION HAVE AN ACTIVE FOREIGN OFFICE DURING THE CALENDAR YEAR?
RCONC594	DID INSTITUTION HAVE AN ACTIVE FOREIGN BRANCH DURING THE CALENDAR YEAR?
RCONC596	DID INSTITUTION HAVE AN ACTIVE FOREIGN CONSOLIDATED SUBSIDIARY DURING THE CALENDAR YEAR?
RCONC591	WHAT IS THE TOTAL NUMBER OF BRANCHES OR CONSOLIDATED SUBSIDIARIES (OTHER THAN "SHELL" BRANCHES) OWNED BY THE INSTITUTION IN FOREIGN COUNTRIES, PUERTO RICO, OR U.S. TERRITORIES OR POSSESSIONS AS OF THE REPORT DATE?
RCONC595	WHAT IS THE NUMBER OF FOREIGN BRANCHES (OTHER THAN "SHELL" BRANCHES) OWNED BY THE INSTITUTION AS OF THE REPORT DATE?
RCONC597	WHAT IS THE NUMBER OF FOREIGN CONSOLIDATED SUBSIDIARIES OWNED BY THE INSTITUTION?
RCONC592	DID THE INSTITUTION EVER SHIFT ITS REPORTING STATUS BECAUSE THE ASSETS EXCEEDED $300 MILLION AS OF JUNE 30, OF ANY PREVIOUS YEAR; OR DID THE INSTITUTION EVER SHIFT ITS REPORTING STATUS AS A RESULT OF A BUSINESS COMBINATION OR BRANCH ACQUISITION THAT CAUSED TOTAL ASSETS TO EXCEED $300 MILLION?
RCONC593	DID THE INSTITUTION EVER SHIFT ITS REPORTING STATUS BECAUSE THE ASSETS EXCEEDED $100 MILLION AS OF JUNE 30, OF ANY PREVIOUS YEAR; OR DID THE INSTITUTION EVER SHIFT ITS REPORTING STATUS AS OF A RESULT OF A BUSINESS COMBINATION OR BRANCH ACQUISITION THAT CAUSED TOTAL ASSETS TO EXCEED $100 MILLION?
RCONC695	DOES THE INSTITUTION EITHER INDIVIDUALLY OR ON A COMBINED BASIS WITH AFFILIATED DEPOSITORY INSTITUTIONS, REPORT OUTSTANDING CREDIT CARD RECEIVABLES THAT EXCEED, IN THE AGGREGATE, $500 MILLION AS OF REPORT DATE, OR IS THE INSTITUTION A CREDIT CARD SPECIALTY BANK AS DEFINED FOR UNIFORM BANK PERFORMANCE REPORT PURPOSES?

Reportability Concept – Structure Vendor:
The Structure Vendor is a new type of reportability concept which must be reported by vendor software to the CDR. These values cannot be computed on the CDR as it typically involves a response from the Financial Institution.

The following is a sample of Structure Vendor Reportability concept:

Reportability Concept	Long Caption
RCONKX18	DID YOUR INSTITUTION ADOPT ASU N0. 2016-13, MEASUREMENT OF CREDIT LOSSES ON FINANCIAL INSTRUMENTS?

Reportability Rule (the Boolean formula)

Reportability Rules make use the 'MonthOf' and 'ExistingOf' functions as defined in Section 2.10 *Formula Grammar*.

Reportability Rules reflect a translation of FFIEC business rules and instructions into the syntax of a Boolean formula. These equations evaluate to 'true' or 'false'. There are twenty-two reportability rules in the taxonomies scheduled for initial implementation. New reportability rules might be introduced on an as needed basis. Reportability rules are expressed using a 'formula' resource element with the role type '**https://www.cdr.ffiec.gov/xbrl/rule/ruleType3**'

Reportability Rule	Description
RR0001	031-Base Level
RR0002	041-Base Level
RR0003	041 - Reporting Status = Medium
RR0004	041 - Reporting Status = Large
RR0005	March 031 Always and Only
RR0006	March 041 Always and Only
RR0007	December Always and Only
RR0008	June Always an Only
RR0009	031 - Trading
RR0010	041 - Trading
RR0011	031 - Credit-Card
RR0012	041 - Credit-Card
RR0013	031-RCT-Base-Level-Annual-Disclosure
RR0014	041-RCT-Base-Level-Annual-Disclosure
RR0015	031-RCT-Over-100-Additional-Annual-Disclosures
RR0016	041-RCT-Over-100-Additional-Annual-Disclosures
RR0017	031-RCT-Over-250-or-Income-Additional-Annual-Disclosures
RR0018	041-RCT-Over-250-or-Income-Additional-Annual-Disclosures
RR0019	031-RCT-Over-250-or-Income-Additional-Quarterly-Disclosures
RR0020	041-RCT-Over-250-or-Income-Additional-Quarterly-Disclosures
RR0021	031-RCI-IBF Plus One Other Foreign Office
RR0022	041 - Reporting Status = Agricultural-Small-Medium

As shown below, the formula expressions include references to reportability concepts as well as current report and prior reporting periods' financial data.

Name	Description	FormulaInterpreted
RR0003	041 - Reporting Status = Medium (IBFEverThisYear = false And EdgeEverThisYear = false And FrgnOfficeEverThisYear = false) And (EverMedium = true Or 041TotalAssets_pjun > 100000000 Or 031TotalAssets_pjun > 100000000 Or (merger_startup_this_qtr = true And 041TotalAssets_p0 > 100000000))	(ExistingOf(cc:RCONC587[P0],false) = false AND ExistingOf(cc:RCONC588[P0],false) = false AND ExistingOf(cc:RCONC590[P0],false) = false AND (ExistingOf(cc:RCONC593[P0],false) = true OR ExistingOf(cc:RCON2170[-P1Y/-06-end],0) >= 100000000 OR ExistingOf(cc:RCFD2170[-P1Y/-06-end],0) >= 100000000 OR (ExistingOf(cc:RCONA901[P0],false) = true AND ExistingOf(cc:RCON2170[P0],0) >= 100000000)))
RR0004	041 - Reporting Status = Large (IBFEverThisYear = false And EdgeEverThisYear = false And FrgnOfficeEverThisYear = false) And (EverLarge = true Or 041TotalAssets_pjun > 300000000 Or 031TotalAssets_pjun > 300000000 Or (MergerStartupThisQuarter = true And 041TotalAssets_p0 > 300000000))	(ExistingOf(cc:RCONC587[P0],false) = false AND ExistingOf(cc:RCONC588[P0],false) = false AND ExistingOf(cc:RCONC590[P0],false) = false AND (ExistingOf(cc:RCONC592[P0],false) = true OR ExistingOf(cc:RCON2170[-P1Y/-06-end],0) >= 300000000 OR ExistingOf(cc:RCFD2170[-P1Y/-06-end],0) >= 300000000 OR (ExistingOf(cc:RCONA901[P0],false) = true AND ExistingOf(cc:RCON2170[P0],0) >= 300000000)))
RR0009	031 - Trading ((IBFEverThisYear = true Or EdgeEverThisYear = true Or FrgnOfficeEverThisYear= true) And (031AverTradingRCK7_pmar >= 2000000 Or 031AverTradingRCK7_pjun >= 2000000 Or 031AverTradingRCK7_psept >= 2000000 Or 031AverTradingRCK7_pdec >= 2000000 Or 041AverTradingRCK7_pmar >= 2000000 Or 041AverTradingRCK7_pjun >= 2000000 Or 041AverTradingRCK7_psept >= 2000000 Or 041AverTradingRCK7_pdec >= 2000000))	((ExistingOf(cc:RCONC587[P0], false) = true OR ExistingOf(cc:RCONC588[P0], false) = true OR ExistingOf(cc:RCONC590[P0], false) = true) AND (ExistingOf(cc:RCFD3401[-P1Y/-03-end],0) >= 2000000 OR ExistingOf(cc:RCFD3401[-P1Y/-06-end],0) >= 2000000 OR ExistingOf(cc:RCFD3401[-P1Y/-09-end],0) >= 2000000 OR ExistingOf(cc:RCFD3401[-P1Y/-12-end],0) >= 2000000 OR ExistingOf(cc:RCON3401[-P1Y/-03-end],0) >= 2000000 OR ExistingOf(cc:RCON3401[-P1Y/-06-end],0) >= 2000000 OR ExistingOf(cc:RCON3401[-P1Y/-09-end],0) >= 2000000 OR ExistingOf(cc:RCON3401[-P1Y/-12-end],0) >= 2000000))

Following is a sample list of financial concepts referenced in the reportability rules. This information would need to be collected from the reporter prior to the successful processing of the reportability edits described in the next section. With regard to missing values for financial concepts, the reportability rules follow the approach of defaulting to the value of zero. For example, if data for prior period assets is unavailable, RR003 and RR004 above will assume the default value of zero in evaluating the expression.

Concept Name	Short Caption	Concept Type
RCFD1590	LOANS TO FINANCE AGRICULTURAL PROD	Reported
RCFD2122	TOT LNS&LEASE LESS UNEARN INC ON LNS	Reported
RCFD2170	TOTAL ASSETS	Reported
RCFD3401	QTLY AVG OF ASSETS HELD IN TRDG ACCT	Reported
RCFDB538	CREDIT CARDS LOANS	Reported
RCFDB707	OTSTDNG PRNCPL BAL OF,ETC-CR CRD RCV	Reported
RCFDB762	AMT OF OWNRSHP(SELLER)INT,ETC-CR CRD	Reported
RCFDB867	DOES BK HAVE ANY FIDUCIARY/RLTD ACT?	Reported
RCFDB894	TOTAL FIDUCIARY ACCTS-MANAGED ASSETS	Reported
RCFDB895	TOTL FIDUCIARY ACCTS-NON-MNGD ASSETS	Reported
RCON1590	LOANS TO FINANCE AGRICULTURAL PROD	Reported
RCON2122	TOT LNS&LEASE LESS UNEARN INC ON LNS	Reported
RCON3401	QTLY AVG OF ASSETS HELD IN TRDG ACCT	Reported
RCONB538	CREDIT CARDS LOANS	Reported
RCONB707	OTSTDNG PRNCPL BAL OF,ETC-CR CRD RCV	Reported
RCONB762	AMT OF OWNRSHP(SELLER)INT,ETC-CR CRD	Reported
RCONB867	DOES BK HAVE ANY FIDUCIARY/RLTD ACT?	Reported
RCONB894	TOTAL FIDUCIARY ACCTS-MANAGED ASSETS	Reported
RCONB895	TOTL FIDUCIARY ACCTS-NON-MNGD ASSETS	Reported
RIAD4070	INCOME FROM FIDUCIARY ACTIVITIES	Reported

Concept Name	Short Caption	Concept Type
RIAD4074	NET INTEREST INCOME	Reported
RIAD4079	TOTAL NONINTEREST INCOME	Reported
RCON2170	TOTAL ASSETS	Reported

Reportability Edit (the association or connector to the Report concept)

Reportability Edits make use the 'ExistNonEmpty' function as defined in Section 2.10 *Formula Grammar.*

The Reportability Edit is a Boolean formula that references a single Report concept and one or more Reportability Rules. Reportability Edits follow the same syntax as that of validity and quality edits. Reportability edits are expressed using the 'If' statement. Reportability edits are expressed using a 'formula' resource element with the role type '**https://www.cdr.ffiec.gov/xbrl/rule/ruleType4'**

Reportability Edits are provided to enable programmatic determination of the concepts a FI MUST report in an instance document. The basic difference between Reportability Edits and Validity/Quality Edits is that Reportability Edits are evaluated before Validity/Quality Edits to determine which concepts need to be collected from the FI. Another difference is that Reportability Edits are not used to validate or verify FI data. Reports (instance documents) that do not contain all of the required concepts will be rejected by the CDR. FI's will continue to be required to **supply any** missing data to comply with the FFIEC reporting requirements.

3.3 Reportability rules design

3.3.1 Taxonomy architecture

The core & reportability taxonomies are designed to function independently, thus Software Vendors/FI's who choose not to implement reportability rules can ignore the Reportability taxonomy.

Reportability taxonomy MUST contain the following schema and linkbases –

Reportability Schema

The Reportability schema imports the core XBRL and FFIEC schema files. It also imports the Concepts schema file. It contains definitions for all reportability edit concepts (of Boolean data type) and a definition for an abstract root concept. The namespace on this schema MUST be versioned using the period information and the version number. For example the namespace on a Reportability schema for the reporting period September 2003, version 1 would be:

https://www.cdr.ffiec.gov/xbrl/call/rr/2003-09-30/v1/

The Reportability Rule schema call-rr-yyyy-mm-dd-v#.xsd will include the new attribute "rrConceptType" definition:

<attribute name="rrConceptType">

```
        <annotation>
                <documentation>
                  The attribute to identify Structure, Structure Vendor and other concept types )
                </documentation>
        </annotation>
          <restriction base="string" >
                < enumeration value="structure" />
                <enumeration value="structureVendor" />
                <enumeration value="other" />
          </restriction >
</attribute>
```

Reportability Definition Linkbase

The Reportability definition linkbase contains definition links between root concept and reportability concepts. The arc role attribute on the 'definitionArc' element MUST have the following value:

http://www.xbrl.org/2003/arcrole/general-special

The Reportability definition linkbase contains all reportability concepts that MUST be processed by an FI's prior to executing reportabililty edits. An example of a reportability concept id RCONC587 – 'Did Institution Have An Active International Banking Facility During The Calendar Year?'

The contents of the reportability definition linkbase can be used to build a questionnaire for an FI, as shown in Figure 4:

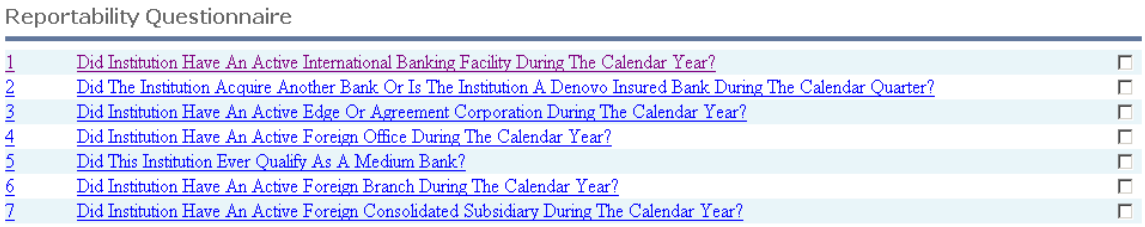


Figure 4 Sample Reportability Questionnaire

Reportability concepts are not reported to FFIEC, they are solely intended for the vendors to process reportability rules.

The Definition Linkbase will included the new rrConcept type:

```
<loc xlink:type="locator" xlink:href="call-rr-2020-03-31-v207.xsd#rr_RROOT"
xlink:label="rr_RROOT" />
    <loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCONKX18"
xlink:label="cc_RCONKX18" /
    <definitionArc                                                    xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/general-special"  xlink:from="rr_RROOT"
xlink:to="cc_RCONKX18" order="18" use="optional" />
```

Reportability Captions Linkbase

The Reportability captions linkbase is expressed as an XBRL label linkbase. Reportability caption linkbase

MUST contain one extended link that has all the captions and relationships between concepts and captions. A 'locator' element is used to point to the concepts in the concepts schema; a 'resource' element is used to contain the caption and a 'labelArc' to connect a concept to its caption. The arc role attribute on the 'labelArc' element MUST have the following value:

https://www.cdr.ffiec.gov/xbrl/rr/rrCaption

The Caption Linkbase will included the new rrConceptType::

```
<loc xlink:type="locator" xlink:href="concepts.xsd#cc_RCONKX18"
xlink:label="cc_RCONKX18" />
    <labelArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
xlink:from="cc_RCONKX18" xlink:to="cc_RCONKX18_lbl_97" />
    <label                                                    xlink:type="resource"
xlink:role="https://www.cdr.ffiec.gov/xbrl/rr/rrCaption"
xlink:label="cc_RCONKX18_lbl_97" xml:lang="en">DID YOUR INSTITUTION ADOPT ASU N0. 2016-
13, MEASUREMENT OF CREDIT LOSSES ON FINANCIAL INSTRUMENTS?</label>
```

Reportability Formula Linkbase

The Reportability formula linkbase contains Reportability rules and Reportability edits. Reportability formula linkbase MUST contain a single extended link to contain all the rules and edits. A 'locator' element is used to point to the elements in the core schema, a 'formula' resource element to express the formula, a 'formulaArc' to relate elements to the resource. The arc role attribute on the 'formulaArc' element MUST have the following value:

https://www.cdr.ffiec.gov/2003/arcrole/concept-formula

The 'xlink:role' attribute on the formula resource element MUST have either of the following two values depending on the type of formula.

Reportability rule:

https://www.cdr.ffiec.gov/xbrl/rule/ruleType3

Reportability edit:

https://www.cdr.ffiec.gov/xbrl/rule/ruleType4

Reportability Formula Messages Linkbase

The Reportability formula messages linkbase is expressed as an XBRL label linkbase. The linkbase has one extended link with locators to the edits involved, resources for the edit messages and arc's to connect the edit messages to the edits. The 'xlink:role' attribute on the label resource element MUST be

https://www.cdr.ffiec.gov/xbrl/rule/ruleMessage4

3.3.2 Messages

Every Reportability Edit (ruletype4) is associated with an Edit Message. This information is stored in a Reportability Edit Messages linkbase implemented as an XBRL label linkbase. A sample message could be "concept cc:RCFDB868- Personal trust and agency accounts, MUST be reported".

3.4 Processing Guidelines

3.4.1 Pre Processing of Reportability Edits

Software vendors MAY pre-process the Reportability Edits to determine the set of concepts that a FI MUST report. This set of concepts can be used to determine which Validity and Quality edits to process before submitting the instance document.

3.4.2 Post Processing of Reportability Edits

Software vendors MAY post-process the Reportability Edits to determine if the FI has reported the complete and correct set of concepts. The CDR MUST process all Reportability Edits on instance document submission. An instance document cannot be submitted to the CDR if any of the Reportability Edits fail.

4. Instance Document Specification

XBRL instances contain facts, with each fact corresponding to a concept defined in their supporting Discoverable Taxonomy Set (DTS). XBRL instances also contain context and unit elements that provide additional information needed to interpret the facts in the instance [XBRL Specification 2.1, Section 4].

Figure 5 - FFIEC CDR Report 31 and 41 Instance Documents, describes the four states of the Call Report data sets as prepared by banks or Call Report software vendors and consumed by the CDR.

State 1 will be prepared and validated against "External Edit Rules" producing Boolean results for each edit. Those results and explanations for each failure will be added to the State 1 data set to produce the State 2 data set. The State 2 data set must be submitted to the CDR in the form of a valid XBRL instance. States 3 and 4 are for internal CDR processing.

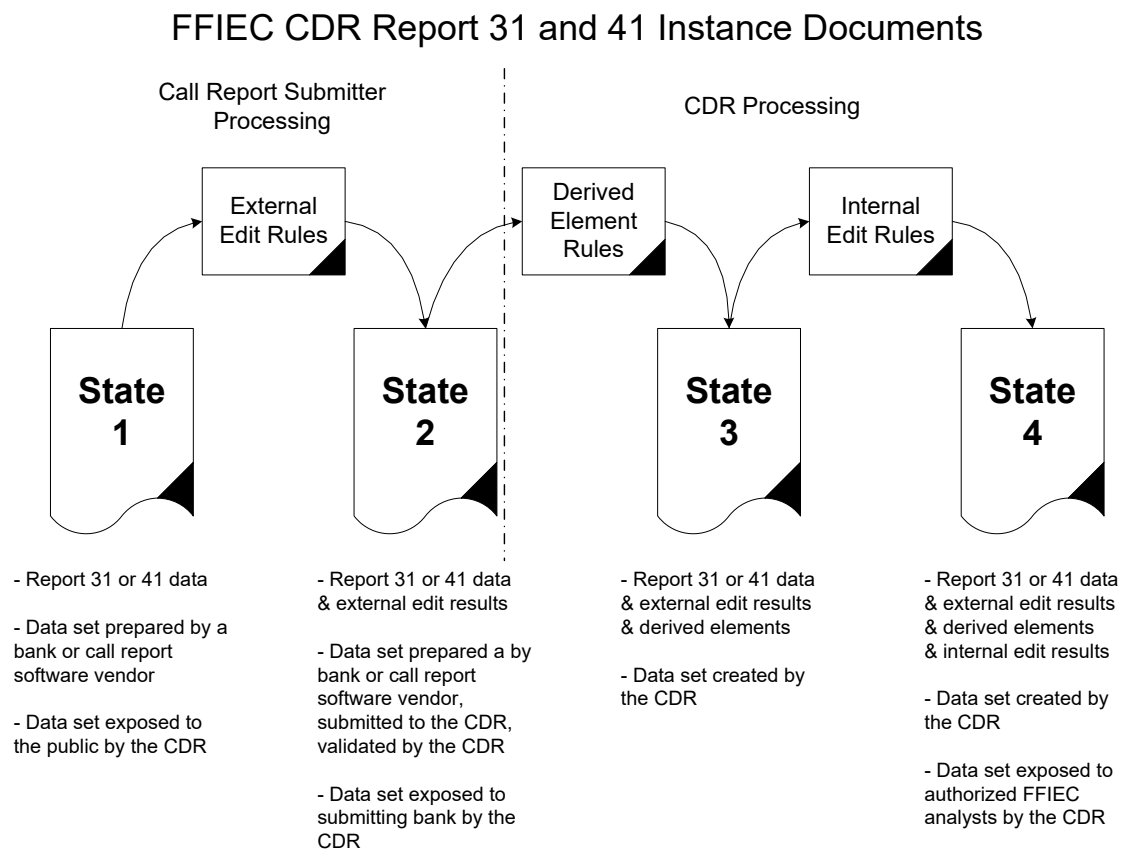


Figure 5 FFIEC CDR Report 31 and 41 Instance Documents

In addition to the XBRL Specification Version 2.1 the following extensions apply:

1. Report Instances MUST only contain one root element and that root element MUST be XBRL.

2. All report period references MUST be valid quarter-end dates conforming to the following convention: ***CCYY***-03-31, ***CCYY***-06-30, ***CCYY***-09-30, and ***CCYY***-12-31.

3. Root element of the report instance MUST contain the following:

   Namespace declarations required of all XML Schema instances (namespace prefix = URI):

   ```
   xsi = "http://www.w3.org/2001/XMLSchema-instance"
   ```

   Namespace declarations required of all XBRL instances (namespace prefix = URI):

   ```
   xmlns = "http://www.xbrl.org/2003/instance"
   xlink = "http://www.w3.org/1999/xLink"
   xmlns:link = "http://www.xbrl.org/2003/linkbase"
   ```

```
xmlns:xbrli="http://www.xbrl.org/2003/instance"
xmlns:xbrldi="http://xbrl.org/2006/xbrldi"
xmlns:ios4217=" http://www.xbrl.org/2003/iso4217"
```

Namespace declarations required of all Call XBRL instances (namespace prefix = URI):

```
FFIEC[ReportName]-[Period]
="https://www.cdr.ffiec.gov/xbrl/Call/DataSet/Period/Version"
cc="https://www.cdr.ffiec.gov/xbrl/Call/concepts"
xmlns:ffieci="https://www.cdr.ffiec.gov/cdr"
```

Schema Location value pairs for all Call XBRL Instances (namespace, location):

```
https://www.cdr.ffiec.gov/xbrl/Call/DataSet/Period/Version
DataSeries-DataSet-Period-version.xsd

"https://www.cdr.ffiec.gov/xbrl/Call/concepts concepts.xsd"
```

DataSet: report031, report041

Period: 2004-06-30, 2005-03-31

Version: v1, v2, v3, etc.

Note: Version is incremented by one with every new taxonomy generation for a given Data-Series.

Example of Call XBRL Instance

```
<?xml version="1.0" encoding="utf-8" ?>
<xbrl xmlns="http://www.xbrl.org/2003/instance"
  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"
  xmlns:xbrli="http://www.xbrl.org/2003/instance"
  xmlns:xbrldi="http://xbrl.org/2006/xbrldi"
  xmlns:ffieci="https://www.cdr.ffiec.gov/cdr"
  xmlns:iso4217="http://www.xbrl.org/2003/iso4217" xmlns:ffiec031-2007-06-
  30="https://www.cdr.ffiec.gov/xbrl/call/report031/2007-06-30/v34"
  xmlns:cc="https://www.cdr.ffiec.gov/xbrl/call/concepts"
  xsi:schemaLocation="https://www.cdr.ffiec.gov/xbrl/call/report031/2007-06-
  30/v34/ call-report031-2007-06-30-v34.xsd
  https://www.cdr.ffiec.gov/xbrl/call/concepts concepts.xsd">
```

Report instances MUST include a 'schemaRef' element for every XBRL taxonomy schema used directly by the instance.

Example for Call XBRL Instance

```
<link:schemaRef xlink:type="simple" xlink:href="call-report031-2007-06-30-
v34.xsd"/>
<link:schemaRef xlink:type="simple" xlink:href="concepts.xsd"/>
```

4. Report instances MUST include context for each unique entity, period set of data.

   Example

```
<context id="CI_111111_2003-09-30">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr">111111</identifier>
</entity>
 <period>
  <instant>2003-09-30</instant>
 </period>
</context>
```

5. Report instance contexts MUST conform to the following conventions.

   Example

   id = "C[D/I]_***RSSDID_Period***"
   entity identifier scheme = "https://www.cdr.ffiec.gov/cdr"
   entity identifier = ***RSSDID***

   Concepts measured at an instant of time (periodType attribute is set to 'instant' in the concept definition):
   period instant = ***Period***

   Concepts measured over a period of time (periodType attribute is set to 'duration' in the concept definition):
   period startDate ***= yearStartDate***
   period endDate ***= quarterEndDate***

   Note: If the concept is measured over a period of time (periodType attribute is set to 'duration'), use CD_***RSSDID_Period*** else if it is measured at an instant of time (periodType attribute is set to 'instant') use CI_***RSSDID_Period***.

   Example

```
<context id="CI_111111_2003-09-30">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr"> 111111</identifier>
 </entity>
 <period>
  <instant>2003-09-30</instant>
 </period>
</context>
<context id="CD_111111_2003-09-30">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr"> 111111</identifier>
 </entity>
 <period>
  <startDate>2003-01-01</startDate>
  <endDate>2003-09-30</endDate>
 </period>
</context>
```

6. Report instances with dimensional data must also include contexts for each unique entity, period & dimension.

Example

```
<context id="CI_111111_2015-06-30_Branch">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr">111111</identifier>
</entity>
 <period>
  <instant>2015-06-30</instant>
</period>
<scenario>
  <xbrldi:typedMember dimension="ffiec001-2015-06-30:branchDimension">
    <ffiec001-2015-06-30:branch>
       <ffiec001-2015-06-30:ID>0</ffiec001-2015-06-30:ID>
    </ffiec001-2015-06-30:branch>
  </xbrldi:typedMember>
</scenario>
</context>
```

7. Dimensional report instance contexts MUST conform to the following conventions.

Example

id = "C[D/I]_***RSSDID_Period_DimensionName***"
entity identifier scheme = "https://www.cdr.ffiec.gov/cdr"
entity identifier = ***RSSDID***

The scenario element of dimensional contexts contains the structure as indicated in the example below; this information indicates the dimension that is tied to the context as declared in the core schema. The value of the ID element is set as zero and is not used for the instance processing.

Concepts measured at an instant of time (periodType attribute is set to 'instant' in the concept definition):
period instant = ***Period***

Concepts measured over a period of time (periodType attribute is set to 'duration' in the concept definition):
period startDate = *yearStartDate*
period endDate = *quarterEndDate*

Note: If the concept is measured over a period of time (periodType attribute is set to 'duration'), use CD_***RSSDID_Period*** else if it is measured at an instant of time (periodType attribute is set to 'instant') use CI_***RSSDID_Period***.

Example

```
<context id="CI_111111_2015-06-30_Branch">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr"> 111111</identifier>
 </entity>
 <period>
  <instant>2015-06-30</instant>
 </period>
<scenario>
  <xbrldi:typedMember dimension="ffiec001-2015-06-30:branchDimension">
```

```
      <ffiec001-2016-06-30:branch>
         <ffiec001-2015-06-30:ID>0</ffiec001-2015-06-30:ID>
      </ffiec001-2016-06-30:branch>
    </xbrldi:typedMember>
</scenario>
</context>

<context id="CD_111111_2015-06-30_Branch">
 <entity>
  <identifier scheme="https://www.cdr.ffiec.gov/cdr"> 111111</identifier>
 </entity>
 <period>
  <startDate>2015-01-01</startDate>
  <endDate>2015-06-30</endDate>
 </period>
<scenario>
  <xbrldi:typedMember dimension="ffiec001-2015-06-30:branchDimension">
    <ffiec001-2015-06-30:branch>
       <ffiec001-2015-06-30:ID>0</ffiec001-2015-06-30:ID>
    </ffiec001-2015-06-30:branch>
  </xbrldi:typedMember>
</scenario>
</context>
```

8. Report instances MUST include an attribute containing the dimension information for every dimensional concept value. In case of SOD the dimensionValue value represents the office number of the branch.

```
<sc:RCON2200 contextRef="CI_222222_2015-06-30_Branch" ffiec001-2016-06-
30:dimensionValue="100" unitRef="MONETARY" decimals="0">270</sc:RCON2200>
```

9. Dimensional value attributes MUST confirm to the following convention:

   DimensionValue = "[***Dimension Value***]"

10. Report instances context MUST NOT include segment information.

11. Report instances MUST include a vendor identification (ID) number. The MDRM number for vendor ID is RCONB544. Please reference Appendix-B for vendor list.

    Example

```
<cc:RCONB544 contextRef="CI_222222_2003-09-30" unitRef="NON-MONETARY"
decimals="0">270</cc:RCONB544>
```

    ****Note:** There will be no presentation of vendor ID on the report form. The only location for the MDRM definition will be in the concepts schema file (*concepts.xsd)*.

12. Call Report instances MUST include a report type. The MDRM number for report type is RCONC752. The report type list is as follows:

Report Name	Value

FFIEC CALL Report 031	FFIEC031
FFIEC CALL Report 041	FFIEC041

Example

```
<cc:RCONC752 contextRef="CI_222222_2003-09-30">FFIEC041</cc:RCONC752>
```

****Note:** There will be no presentation of report type on the Call report form. The only location for the MDRM definition will be in the concepts schema file (*concepts.xsd*).

13. Call Report instances MUST include a response for CECL adoption. The MDRM number for CECL adoption is RCONKX18. Expected values for CECL adoption is as follows:

DID YOUR INSTITUTION ADOPT ASU N0. 2016-13, MEASUREMENT OF CREDIT LOSSES ON FINANCIAL INSTRUMENTS?	**Value**
Yes	true
No	false

Example
<cc:RCONKX18 contextRef="CI_222222_2019-12-31">true</cc:RCONKX18>

****Note:** There will be no presentation of report type on the Call report form. The only location for the MDRM definition will be in the concepts schema file (*concepts.xsd*).

14. Report instances MUST contain only 'USD', 'NON-MONETARY' and 'PURE' for representing monetary items, non-monetary items and percentages.

Example

```
<unit id="USD">
   <measure>ISO4217:USD</measure>
</unit>
<unit id="PURE">
  <measure>xbrli:pure</measure>
</unit>
<unit id="NON-MONETARY">
  <measure>ffieci:nonMonetary</measure>
</unit>
```

A numeric item MUST have a 'unitRef' attribute that is used to identify the unit element associated with that item. The value of the unitRef attribute MUST be equal to the value of an id attribute on a unit element in the XBRL instance that contains the numeric item on which the unitRef attribute occurs.

```
<cc:RCON3300 contextRef="CI_222222_2003-09-30" unitRef="USD"
decimals="0">32000</cc:RCON3300>

<cc:RCON7273 contextRef="CI_111111_2003-09-30" unitRef="PURE"
decimals="4">0.5050</cc:RCON7273>

<cc:RIAD9106 contextRef="CD_111111_2003-09-30" unitRef="NON-MONETARY"
decimals="0">20030930</cc:RIAD9106>

<cc:RCON3561 contextRef="CI_111111_2003-09-30" unitRef="NON-MONETARY"
decimals="0">10</cc:RCON3561>

<cc:RCONA345 contextRef="CI_111111_2003-09-30">true</cc:RCONA345>

<cc:Deposits contextRef="CI_14409_2007-06-30_1" unitRef="USD"
decimals="0">12500000</cc:Deposits>
```

Note: All concepts with a data type of 'xbrli:monetaryItemType' MUST use 'USD' as 'unitRef' attribute. All concepts with a data type of 'xbrli:pureItemType' MUST use 'PURE' as 'unitRef' attribute. All other concepts with a numeric data type MUST use 'NON-MONETARY' as 'unitRef' attribute.

Note: Unit ID "NON-MONETARY" is unique to FFIEC regulatory reporting and is not defined else where outside this specification. Unit id "NON-MONTETARY" is defined in the ffieci namespace and is not defined in an XBRL or XML schema file.

15. All monetary elements MUST be expressed in dollars in the report instance.

16. A numeric item MUST have a 'decimals' attribute unless it has a nil value, in which case, it MUST NOT have a 'decimals' attribute.

    - The 'xbrli:pureItemType' data type represents growth rates, percentages, and other measures where an implicit numerator and denominator are expressed in the same units. All elements that belong to the 'xbrli:pureItemType' data type MUST be reported using decimal or scientific notation rather than in percentages where the value has been multiplied by 100. The value of 'decimals' attribute for these elements MUST be greater than or equal to "8".

      Example

      ```
      <cc:RCON7273 contextRef="CI_111111_2003-09-30" unitRef="PURE"
      decimals="8">0.50509393</cc:RCON7273>
      ```

    - All elements that belong to 'xbrli:monetaryItemType' data type MUST have a 'decimals' attribute value greater than or equal to "0".

      Example

      ```
      <cc:RCON0081 contextRef="CI_111111_2003-09-30" unitRef="USD"
      decimals="0">100000</cc:RCON0081>
      ```

    - All elements that belong to 'xbrli:IntegerItemType' data type MUST have a 'decimals' attribute equal to "0".

Example

```
<cc:RCON3561 contextRef="CI_111111_2003-09-30" unitRef="NON-MONETARY"
decimals="0">10</cc:RCON3561>
```

- All elements that belong to 'xbrli:decimalItemType' data type MUST have a 'decimals' attribute value greater than or equal to "8".

17. Non-numeric elements MUST only include a contextRef attribute that is the id of a context element in the same instance.

    Example

    ```
    <ffiec041-2003-09-30: R1590.2270_ExplanationText
    contextRef="CI_111111_2003-09-30">CDR is late again!!!
    </ffiec041-2003-09-30: R1590.2270_ExplanationText>
    ```

18. Report instance MUST be a XBRL-valid instance of published Core taxonomy and an XML Schema-valid instance of the taxonomy's schema.

19. A Report instance to be submitted to the CDR System MUST contain only one period of data pertaining to only one financial institution.

20. Report instance MUST include an integer failure explanation code for every quality edit that failed.

21. Report instance MUST include a string failure explanation for every quality edit that failed.

22. Report instance MUST include an explanation code and text for each unique dimension member the quality edit has failed against. The explanation code and text MUST include a contextRef attribute that is the ID of a context element in the same instance.

23. All concepts with Boolean data type MUST be expressed using the lower case literals: "true" and "false".

4.1 Guidelines on 'concepts to be reported in a instance document'

The definition linkbase contains the pool of concepts that should be reported in that particular data series, e.g. FFIEC Call Report 031 or FFIEC Call Report 041. (031/041).

Generally concepts fall into the following categories. The following are examples to clarify reportability rules and do not necessary represent the data presentation; however they reflect the content, e.g. concept label and name:

1. Concepts that MUST be reported by an FI.

Interest income:
- Total Interest and fee income on loans riad4010
  - Loans secured by real estate riad4011
  - Commercial and industrial loans riad4012
  - Loans to individuals for household, family, and other personal expenditures:
    - Credit cards riadb485
    - Other riadn486
  - Loans to foreign governments and official institutions riad4056

2. Concepts that MAY NOT be reported by an FI. (Secondary contact information is optional).

USA PATRIOT Act Section 314(a) Anti-Money Laundering Contact Information
Secondary Contact
- Name textc442
- Title textc443
- E-mail Address textc444
- Telephone: Area code/phone number/extension textc445
  FAX: Area code/phone number textc446

3. Concepts that MAY NOT be reported by an FI.

Impact on income of derivatives held for purposes other than trading from Schedule RI—Memoranda 9--*to be completed by banks with $100 million or more in total assets:*
- Net increase (decrease) to interest income riad8761
- Net (increase) decrease to interest expense riad8762
- Other (non interest) allocations riad8763

4. Concepts that MUST NOT be reported in some reporting periods or concepts that MUST be reported in certain reporting periods.

Indicate the appropriate number of the statement that best describes the most comprehensive level of auditing work performed for the bank by independent external auditors from Schedule RC—Balance Sheet—Memorandum 1
- If FI has with foreign operations RCFD6724
- If FI is limited to domestic operations RCON6724

If a concept belongs to the first category, it MUST be reported.

If a concept belongs to any of the categories numbered 2-4, the instance MAY NOT contain those concepts. If the instance does contain a concept that does not pertain to the FI, it MUST have a 'NULL' value. CDR MUST ignore any concepts that have 'NULL' values.

If an FI is to report a NULL value, the concept MUST have a `nil` attribute and the value MUST be set to "true". A numeric item MUST NOT have either a `precision` attribute or a `decimal` attribute if it has the 'xsi:nil' attribute set to true.

Example of nillable attribute in concepts schema file:

```
<element id="cc_TEXTC442" name="TEXTC442" type="xbrli:stringItemType"
substitutionGroup="xbrli:item" xbrli:periodType="instant" nillable="true">
```

Example of a NULL concept in a report instance:

```
<cc:TEXTC442 contextRef="CI_222222_2003-06-30" xsi:nil="true"/>
```

4.2 Guidelines on 'reporting monetary concepts'

Monetary Data Types:

Concepts that are expressed in financial terms (as unit in a currency) must have a monetary data type.
Monetary concepts are the concepts that have the data type 'xbrli:monetaryItemType'..

Example of a monetary concept definition:

```
<element name="RCFD0071" id="cc_RCFD0071" type="xbrli:monetaryItemType"
substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant"
xbrli:balance="debit" />
```

Monetary Units:

To comply with the XBRL Specification, all monetary concepts, including edit tolerances MUST be expressed in dollars in a report instance.

For example, if the FI reports a value for a concept that equals 'one-hundred thousand dollars', the report instance MUST contain the value '100000'.

Even though the XBRL specifications require data to be reported in dollars, the FFIEC requirement remains unchanged. Please refer the FFIEC Instructions for Preparation of Consolidated Reports of Condition and Income-- Miscellaneous General Instructions—*Rounding*.

4.3 Additional Guidelines on Reporting SOD Data

The following guidelines only pertain to reporting instances for the SOD data series.

1. Prior period deposits must not be reported in the instance document. They are only part of the taxonomy (presentation & reference linkbase) to illustrate difference in deposits between current and previous year.

2. Branch structure data cannot be changed using ammendments. Any changes to the branch structure information after the first submission must be handled by calling the FFIEC analyst.

3. New branches must be reported with a temporary office number beginning with 90000.

4. Change codes concept will be of string item type. The change codes concept value must contain comma separated values for any branch having more than one change code to report.

5. Any updates, corrections, additions or removal of branch structure data must be reported in the original SOD submission. These changes must be accompanied by approprtiate change code(s).

4.4 Valid Character Set for XML Instance Document

CDR XML processor is using UTF-8 encoding for parsing Instance Document characters. The valid characters correspond to a subset of ASCII codes from 32 – 126. In which, the following ASCII chanracters must be escaped

or replaced in the Instance Document.

DEC	Escape Character	Description
38	&	Ampersand
39	'	Single quote
60	< or <	Less than sign
62	> or >	Greater than sign

5. Taxonomy and linkbases naming Conventions

Core Taxonomy (Schema) files follow the following naming convention:

<Data-Series-Name>-report<Report-Type>-<Reporting-Period>-v<Version-number>.xsd

Data-Series-Name: Call etc.
Report-Type: 031, 041 etc.
Reporting-Period: in yyyy-mm-dd format e.g. 2003-12-31.
Version-number: An integer which is incremented by one with every new taxonomy generation for a given Data-Series.

Report Linkbase files follow the following naming convention:

<Data-Series-Name>-report<Report-Type>-<Reporting-Period>-v<Version-number>-<Linkbase suffix>.xml

Linkbase suffix: def – Definition Linkbase
calc – Calculation Linkbase
cap – Captions Linkbase
instr – Instructions Linkbase
pres – Presentation Linkbase
ref- Reference Linkbase
ec – Formula Linkbase
ec-mess – Formula message Linkbase

Reportability taxonomy schema would follow the following syntax:

<Data-Series-Name>-reportability-<Reporting-Period>-v<Version-number>.xsd

Reportability Linkbase files follow the following naming convention:

<Data-Series-Name>- reportability-<Reporting-Period>-v<Version-number>-<Linkbase suffix>.xml

Linkbase suffix: def – Definition Linkbase
ec – Formula Linkbase
ec-mess – Formula message Linkbase

Example:

Schema/Linkbase	Filename
Core schema	call-report031-2003-12-31-v4.xsd
Definition linkbase	call- report031-2003-12-31-v4-def.xml
Calculation Linkbase	call- report031-2003-12-31- v4-calc.xml
Captions Linkbase	call- report031-2003-12-31- v4-cap.xml
Instructions Linkbase	call- report031-2003-12-31- v4-instr.xml
Presentation Linkbase	call- report031-2003-12-31- v4-pres.xml
Reference Linkbase	call- report031-2003-12-31- v4-ref.xml
Formula message Linkbase	call- report031-2003-12-31- v4-ec-mess.xml
Reportability schema	call-rr-2003-09-30-v1.xsd
Reportability definition linkbase	call-rr-2003-09-30-v1-def.xml
Reportability captions linkbase	call-rr-2003-09-30-v1-cap.xml
Reportability formula linkbase	call-rr-2003-09-30-v1-ec.xml
Reportability formula messages linkbase	call-rr-2003-09-30-v1-ec-mess.xml

6. Appendix A - Core XBRL and FFIEC Schemas

Core XBRL and FFIEC schemas are provided as an addendum to this specification document.

List of files:

1.	MDR Schema	mdr_schema.xsd
2.	xLink attributes schema (XBRL Spec.)	xlink-2003-12-31.xsd
3.	Element type for use with extended links and linkbases schema (XBRL Spec.)	xl-2003-12-31.xsd
4.	XBRL simple and extended links constructs schema (XBRL Spec.)	xbrl-linkbase-2003-12-31.xsd
5.	Syntax relating to XBRL instance documents (XBRL Spec.)	xbrl-instance-2003-12-31.xsd
6.	Formula linkbase schema	ffiec-linkbase-2007-09-10.xsd
7	FFIEC data types syntax	ffiec-instance-2004-06-10.xsd

7. Appendix B – Vendor Identification (ID)

Call software vendors and their corresponding identification numbers are provided as an addendum to this specification document. The FFIEC publishes a list of software vendors each quarter in the Quarterly Call Report Supplemental Instructions, available from https://www.ffiec.gov/resources/reporting-forms.

Vendor list:

1.	FiServ Inc.	250
2.	DBI Financial Systems, Inc.	270
3.	Wolters Kluwer Financial Services	320
4.	Regnology Solutions US Inc. (formerly Vermeg; IDOM, Inc.)	350
5.	Fed Reporter, Inc.	369
6.	Adenza (formerly Axiom SL, Inc)	628
7.	SHAZAM Core Services	731

8. Appendix C - Web Services

See the *CDR Vendor Specification for MFA v1.0* and *SIS CDR API Vendor Web Services v1.1* for details and samples of the available CDR web service APIs.