



**Electronic Reporting**

**MER Data Reference  
Guide - Introduction**

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## Document History

Version	Date	Description
1.0	23/03/2007	Initial version
2	31/08/2007	Updated to include shared definition schemas
3	05/06/2008	Change to section 7 (Version Control)
4	07/10/2009	Addition of Profile Switch Rules document to section 3.1

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# 1 What is the purpose of this document?

This document is an introduction to the Mandatory Electronic Reporting (MER) Data Reference Guide (DRG). It describes the structure of the DRG and how to use it.

The DRG specifies the required format for XML regulatory data which can be submitted to the FSA via either system-to-system "Direct Communication" data transfer or "Web Upload" as part of MER.

It is important that this document is read in full before proceeding to the other documentation in the MER Data Reference Guide.

In all cases the FSA Handbook remains the definitive source of information regarding firms' reporting obligations and rules. In any case of ambiguity or contradiction the FSA Handbook must be considered correct.

# 2 Who should read this document?

This document has been written specifically for IT professionals at firms who have chosen to utilise one of the XML-based interfaces to MER (direct communication or web upload), either in addition to or instead of the Web Form (or Offline Form) interface. Anyone involved in the creation or transmission of XML data as part of MER must read this document. The reader is expected to be literate in XML<sup>1</sup> and XML Namespaces, familiar with XML Schemas<sup>2</sup> and have a general understanding of MER.

All firms have the option to use only the Web Form interface to MER (and there may also be an Offline Form interface option too). If such an interface is chosen, there is no need to read this or other documents in the Data Reference Guide.

# 3 MER Data Reference Guide

The MER Data Reference Guide is comprised of a series of documents of which this document is the first. The documents provide the information required to build and populate valid XML instances for the MER system. The documentation is grouped separately: those files that are generic and those specific to individual Data Items<sup>3</sup>. The remainder of this section goes on to explain the structure of the MER Data Reference Guide and the purpose and format of each of the constituent documents.

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<sup>1</sup> XML is a [W3C standard](http://www.w3.org/) and there is a wealth of introductory material available, both on the Web and in books.

<sup>2</sup> XML Schema is the standard way to define an XML document structure. It is also a W3C standard. An excellent introductory primer is available on the web at: <http://www.w3.org/TR/xmlschema-0/>.

<sup>3</sup> See the glossary at the end of this document for definitions of terms such as Data Item and Data Element.

### 3.1 General Documentation

Contains the following documents relevant to all firms developing XML for the MER system:

- Introduction      This document.
- Cross Validation Rules      Lists all external cross Data Item validation rules. Should be used to determine the cross data item validation that needs to be applied to Data Items being submitted in the same IRR subset.
- Change Log      Lists all changes between different published versions of the specification of each Data Item.
- Profile Switch Rules      Profile switches are a series of true/false flags based on a firm's characteristics such as its permitted activities and legal status. They are used within some of the RMA data items to "switch off" specific elements which are not relevant to the firm. For example there are sections that need to be completed only for incorporated firms, so all elements within such sections are switched off for unincorporated entities. Firms using the online system see elements that are switched off as greyed out on the online form. Firms using XML to upload their data or send in direct communications will see errors if they attempt to submit data items containing elements that are switched off. The direct communications request "RetrieveScheduleWithProfileRequest" will return a list of switched off elements for each RMA data item on the firm's schedule.

The profile switch rules are reflected in the validation rules present in the individual data definitions for each data item (normally in the form of conditional rules, such as "Conditional: Mandatory if firm is incorporated (and not an LLP) otherwise must not be submitted". However, this separate document lists together all the rules which determine which RMA elements are switched on/off according to which profile characteristics a firm has.

### 3.2 General Schemas

Contains specifications for the following schemas:

- Common Types:      Schema representing common data types used in the XML for the MER Data Items. It is included in and referenced by each of the Data Item schemas and is used to validate the data types.
- SDSnnn:      One or more Shared Definition Schemas. These define XML structures, groups and types that are shared between a small number of Data Item schemas.
- Meta Data:      Schema that defines the annotation elements contained in the Data Item schemas.

Each specification will consist of a number of files: where applicable these will be of the same type as those files associated with the Data Item Specific Schema specifications (see below).

### 3.3 Data Item Specific Schemas

The specification for each Data Item within the DRG consists of the following files:

- **Data Definition (xls):** Defines each Data Element required in the XML instance as well as associated validation rules. Also shows the FSA Handbook version of the Data Item populated with valid sample data. The data matches that in the XML sample. Provides the translation between the FSA Handbook version of the Data Item and the equivalent XML instance. Should be used to aid construction and population of the XML instance.

Each Data Definition spreadsheet has two worksheets: 'Data Item Data Definition' and 'Handbook Layout and Sample Data'. These are explained in subsequent sections.
- **Schema (xsd):** XML schema for the individual Data Item. Contains the version number as well as the version history showing the active period for each version of the schema. Should be used to aid understanding of the XML structure and to validate an XML instance for a specific Data Item.
- **Sample (xml):** A sample XML instance is provided that is both schema and business rule valid, and populated with sample data matching that found in the Data Definition spreadsheet. Where a valid sample requires certain Data Elements to be omitted, separate 'valid' and 'full' versions of the sample XML instance are provided. Provides a complete example of the XML instance. Should be used to aid understanding of the data definition and XML instance format.
- **Auto-Documentation (pdf):** Documentation supporting the XML schema. Provides a verbose description of the XML schema and what a valid XML instance would look like. Can be used to aid understanding of the XML schema and instance. This file has been automatically generated by a schema editor using the given schema.
- **Logical structure (jpg):** Logical diagrammatic view of the Data Item in the form of an image map. (NB. repeated parts of the structure are expanded only once.) Can be used to aid understanding of the XML schema and instance. This file has also been automatically generated by a schema editor using the given schema.

#### 3.3.1 Data Item Data Definition

The Data Item Data Definition worksheet provides the following information for each Data Element:

- Field reference
- Field label
- XML tag name
- Reference to Handbook guidance (where available)
- Definition of the data type (see later section for more details)
- Internal business rule validations that are relevant to the data element (All validation rules will contain a tolerance appropriate to the degree of rounding allowed in the constituent elements, unless specified otherwise.)
- Error message code (see later section for more details)
- Additional Information.

The error message codes correspond to a fixed set of errors used by the MER system and are provided for reference purposes. The error message text associated with each code is shown in section 6 of this document.

The worksheet follows a standard format and uses colour coding and indentation to highlight nested levels of information within the XML instance structure and those XML tags (Data Elements) that will be populated with business data.

Data Element Type	Colour Code	Notes
Nested level 1	Rose	Data Item level
Nested level 2	Light turquoise	First section on the Data Item
Nested level 3	Light yellow	First sub-section on the Data Item
Nested level 4	Pale blue	Second sub-section on the Data Item
Nested level 5	Lavender	Third sub-section on the Data Item
Nested level 6	Grey – 25%	Fourth sub-section on the Data Item
Nested level 7	Gold	Fifth sub-section on the Data Item
Data	White	Business data level (Data can be nested at any level under 1)

(NB. Not all data items will have every level of nesting.)

Where individual data elements are repeated in the Data Item, the Data Definition worksheet will not show these in full but will state which data element rows should be repeated. In this case all information from the original row will apply including the XML tag name. Any validation rules should be adapted to apply to the row in question.

### 3.3.2 Handbook Layout and Sample Data

Copies of the FSA Handbook layout of the Data Item (predominantly from SUP 16, Annex 24R) are provided for reference purposes only to aid understanding of the data required to populate the XML instance. The copy layout is populated with a representative sample of valid data that can be compared against the corresponding sample XML instance. The layout provided contains a row and column reference that is used within the Data Item Data Definition worksheet to associate the specific data to the XML tag and to define the validation rules.

## 4 Data Types & Rules for Numeric Data

Each Data Element must have a data type associated with it. It may also have other rules associated with it that further limit its acceptable value range. The Data Item Data Definition worksheets indicate the data type and any additional rules applicable to each Data Element. The worksheets use abbreviated data type names (such as "Pct2" for percentage values to two decimal places). A list of these abbreviations and the full definition of each data type is given in the CommonTypes Data Definition spreadsheet. This is because most of these data types use custom definitions which are defined in the CommonTypes schema.

The following rules are applicable to all numeric values, irrespective of the data type:

### Rules for numeric values

Numeric data must adhere to the following rules:

- Positive values must not include the plus symbol (' + ').
- Negative values must always start with a minus symbol (' - '). Negative zero is permitted and is equal to zero.
- The figure must not contain any spaces.
- Thousands separators must not be used.
- The decimal point must be represented as a point or dot (' . ')
- The figure must not contain any leading zeros unless it is zero or a fraction value less than 1, in which case a single zero is mandatory. For example, the following are allowed: 11.00, 12.0, 0.42, 0.08, 80.0003, 0, 0.0, 0.00, while the following are not allowed: 00012, 01, 08.2.
- Trailing zeros may be permitted up to a specified limit.
- A trailing decimal point is not permitted (e.g. '12.')
- Currency symbols must not be included.
- Percentage symbol must not be included (e.g. 100% = 100, 40% = 40.)

## 5 Currency and Monetary Units

When reporting financial data, it is necessary to also report the currency and monetary units for the data submitted. Within MER, currency and monetary units are recorded at the Data Item level via attributes within the root element of the Data Item XML. For example, if the reporting data submitted was in thousands of pounds the attributes would be currency="GBP", units="thousands". The FSA Handbook provides guidance on reporting currency and units for firms. Where a Data Item contains no financial data, the currency and units attributes should not be included.

## 6 Error Messages

The following table specifies the standard error messages that will be returned in the case of validation failures.

Error Code	Message
ERR0010	Field must match calculation: [calculation]
ERR0020	Field must be equal to: [other field or value]
ERR0030	Total field must equal sum of components: [component list]
ERR0040	Field must match comparison: [comparison]
ERR0047	Field must be one of: [list of valid values]
ERR0050	Condition: [condition] must hold
ERR0080	Mandatory field: [field] must be completed

## 7 Version Control

Version control is maintained at the Data Item level.

Prior to the 5 June 2008, if any one of the main files associated with a data item (ie xls, xsd or xml) changed, every file would have been given the same new version number. Thus if, for example, the only change to a data item had been a validation rule which was documented in the spreadsheet, the

xsd schema file would have still been given a new version number and date, even though the schema itself hadn't changed. However, because issuing new schema versions carries a significant overhead for software developers, from the 5 June 2008 onwards, any changes to the xls spreadsheets or xml samples which do not affect the xsd schema will result in a minor version update to the xls spreadsheet or xml sample, but no update to the schema. So, for example, the latest schema version could be v3, whereas the latest associated spreadsheet could be v3.1 and the latest sample v3.2.

New versions of documentation will be made available on the MER website. A clear distinction will be made on the website between future (draft) versions of the documents, the current (live) versions of the documents and previous versions. New versions of the documentation will be accompanied by a change log showing the relevant changes from the previous version. A public announcement of new versions will be made. Where data may still be legitimately submitted against previous versions of schemas, then the specification of these schemas will still be available through the web site.

## 8 Viewing and Downloading the Data Reference Guide

You can view all elements of the DRG on-line from the main DRG index web page: <http://www.fsa.gov.uk/Pages/Doing/Regulated/Returns/IRR/mer/DRG> or you can download the Guide to your own computer.

The main DRG index web page presents a complete list of documents, Data Items and general schema in tables. If you are viewing the DRG on-line, then click on the links in the left hand column in the tables to either view the general documents or open a web page for a specific Data Item or general schema. From the web page for a specific Data Item or general schema you can view the individual files that make up the specification of that component.

If you choose to download the Guide, then there are a number of options depending on how many Data Items you are interested in, how large a file you can download, and whether or not you need the schema documentation that has been automatically generated from a schema editor. The main DRG index web page contains a table of Bulk Downloads which allows you to download the complete guide, the complete guide minus the auto-documentation, or just the general material.

If you want to download the Data Items individually, then bear in mind that you will also need to refer to the general documentation and general schemas. To download Data Items individually, click on the version links in the right hand column of the tables on the web page against the Data Item you are interested in.

## 9 Web Upload and Direct Communication

XML data matching the Data Item specifications in the DRG can be submitted to us in one of two ways: Web Upload or Direct Communication. If Web Upload is chosen, then the XML data will be loaded into the online web forms system and final validation and submission will be similar to if the data had been keyed into the online forms. If Direct Communication is chosen, then the XML data will be transmitted directly from firms' systems to the FSA's systems, without going through the online web forms system.

At this stage, we do not know the precise mechanisms for Web Upload or Direct Communication.

## 10 Glossary of Terms and Abbreviations

Term	Definition
Data Element	A discrete fact or individual piece of information relating to a particular field within a Data Item required to be submitted to the FSA by a firm or other regulated entity.
Data Item	One or more related Data Elements that are grouped together into a prescribed format and required to be submitted by a firm or other regulated entity under SUP 16 or provisions referred to in SUP 16 (E.g. FSA001 - Balance Sheet.)
IRR Subset	An Integrated Regulatory Return Subset consists of a set of Data Items that a specific firm is required to submit by a given date.
MER	Mandatory Electronic Reporting.
XML	Extensible Mark-Up Language.