



**MSRB**

Municipal Securities  
Rulemaking Board

**EMMA – Electronic Municipal Market Access**

The Official Source for Municipal Disclosures and Market Data

# **Specifications for the SHORT Documents Subscription Service**

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Version 3.0, February 2019

## Revision History

Version	Date	Description of Changes
1.0	May 2011	Initial version.
2.0	April 2014	<p>Summary of Changes:</p> <ul style="list-style-type: none"> <li>EMMA Subscription Web Service Interface – Common Data and Document Retrieval Service Interface</li> <li>Figure 1: Message Processing Overview - retrieval methods: get transactions for day, get transaction; get document file</li> <li>XML Message Schema removed</li> <li>Table 1: Subscribe Data Message XML Container removed</li> <li>Sample SOAP Messages</li> <li>Table 2: EMMA Subscription response messages</li> </ul>
2.1	June 2014	<p>SOAP MESSAGE HEADER Changes:</p> <ol style="list-style-type: none"> <li>All reference to "tempuri.org" has been replaced with "emma.msrb.org/schemas/subscriber-service."</li> <li>The "ActivityId" element has been changed -  FROM: &lt;ActivityId CorrelationId="918e8838-d4ea-40b3-afd8-bd8834f63c79" xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics"&gt;63d52b7d-6b6f-46aa-b2e0-f9cbbd0a9949&lt;/ActivityId&gt;  TO: &lt;ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1" xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics"&gt;05803968-d604-4cd1-bc0c-4500a0b6a0b1&lt;/ActivityId&lt;http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E05803968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId&gt;&gt;</li> </ol> <p>SOAP MESSAGE BODY Changes:</p> <ol style="list-style-type: none"> <li>All references to "xmlns="http://emma.msrb.org/schemas/subscriptionmessages/types" have been removed</li> </ol>
2.2	August 2015	Updated the Resources and Support section to reflect the change in hours of operation for Email Support.
3.0	February 2019	Updated document title.



## Resources and Support

MSRB Website: [www.msrb.org](http://www.msrb.org)

EMMA Website: [emma.msrb.org](http://emma.msrb.org)

For assistance, contact MSRB Support at 202-838-1330 or [MSRBsupport@msrb.org](mailto:MSRBsupport@msrb.org).

Live Support: 7:30 a.m. - 6:30 p.m. ET

Email Support: 7:00 a.m. – 7:00 p.m. ET

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## Introduction

The Municipal Securities Rulemaking Board (MSRB) protects investors, issuers of municipal securities, entities whose credit stands behind municipal securities and public pension plans by promoting a fair and efficient municipal market. The MSRB fulfills this mission by regulating securities firms, banks and municipal advisors that engage in municipal securities and advisory activities. To further protect market participants, the MSRB promotes disclosure and market transparency through its Electronic Municipal Market Access (EMMA®) website, provides education and conducts extensive outreach. The MSRB has operated under Congressional mandate with oversight by the Securities and Exchange Commission since 1975.

The EMMA website is a centralized online database operated by the MSRB that provides free public access to official disclosure documents and trade data associated with municipal bonds issued in the United States. In addition to current credit rating information, the EMMA website also makes available real-time trade prices and primary market and continuing disclosure documents for over one million outstanding municipal bonds, as well as current interest rate information, liquidity documents and other information for most variable rate municipal securities.

This manual, contains specifications for the real time, computer-to-computer dissemination of documents and related information submitted to the Short-term Obligation Rate Transparency (SHORT) System <sup>1</sup> and posted on MSRB's EMMA website. This specification provides a general background on the nature of document submissions made to the SHORT System.

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<sup>1</sup> SHORT and EMMA are components of an integrated suite of programs, services and systems ("MSRB market information programs") for the collection of municipal securities market data and documents from dealers and other market participants and the dissemination of such data and documents to the public. The MSRB market information programs leverage the components of the various individual programs, services and systems to enhance the overall efficiency and effectiveness of the MSRB market information programs. In particular, processes, software, hardware or other components initially placed into service for a particular program, service or system may be utilized by other programs, services and systems within the MSRB market information programs to optimize the effectiveness of the MSRB market information programs and the individual components thereof. Submissions of documents to the SHORT System utilize many components of EMMA.



## Background

The EMMA SHORT document disclosure service, established as a service of EMMA, receives submissions of letters of credit, standby bond purchase agreements, other document(s) that establishes an obligation to provide liquidity, document that defines current auction procedures and interest rate-setting mechanisms, and any amendments thereto (collectively, “SHORT documents”), together with related indexing information to allow the public and persons engaged in regulating the municipal securities market to readily identify and access such documents, from dealers and other market participants.

Submissions made through the EMMA document disclosure service accepted during the hours of 8:30 a.m. to 6:00 p.m. Eastern Time on an MSRB business day are, in general, posted on EMMA within 15 minutes of acceptance, although during peak traffic periods posting may occur within one hour of acceptance. Submissions outside of such hours often are posted within 15 minutes although some submissions outside of the MSRB’s normal business hours may not be processed until the next business day.

The EMMA subscription service makes available all disclosure documents and related indexing information simultaneously with the posting thereof on the EMMA website. The EMMA subscription service is provided through a web service accessible by using various commercially available products. Data is streamed, depending on the subscriber’s own software settings, using XML files with embedded or accompanying transmissions of, PDF files of primary market disclosure documents.

The MSRB subscription service is available to paying subscribers subject to a subscription agreement entered into with the MSRB. Subscribers must conform to the terms and conditions of that agreement. In addition, to purchase a subscription it is necessary to provide the MSRB with verification of the appropriate license from CUSIP Global Services. More information about the subscription agreement and license verification is available on the MSRB’s website at [msrb.org](http://msrb.org).

The MSRB reserves the right to restrict or remove the access of users when their use of the Subscription Service Interface is endangering the integrity of EMMA and its systems.



## EMMA Subscription Service Interface

The MSRB will expose a web service interface to allow subscribers to receive Simple Object Access Protocol (SOAP) standard extensible markup language (XML) messages and portable document format (PDF) documents using secure, computer-to-computer communications. These interfaces will be remotely consumed by applications written by or for subscribers in a wide variety of programming languages and running on a wide variety of platforms. The EMMA Subscription Service Interface exposes the following web service for retrieval of submission data and related files:

Data and Document Retrieval Service:

<https://services.emma.msrb.org/SubscriberServices/EmmaSubscriptionService.svc>

## Beta Platform for EMMA Subscription Web Service Interface

Beta access to the subscription web service interface is made available by the MSRB. This serves as a platform for potential and existing subscribers to conduct tests to ensure proper programming and configuration of their applications for accessing the EMMA Subscription Web Service Interface.

**Data and documents available through the beta platform are for test purposes only and are not to be re-disseminated or otherwise used by subscribers, other than for purposes of testing programming and configuration of subscription applications.**

Access to the beta platform site may require a separate set-up. To inquire about the procedures for accessing the beta platform site, contact MSRB Support at 202-838-1330. The web service interfaces for the beta platform are as follows:

Beta platform for data and document:

<https://servicesbeta.emma.msrb.org/SubscriberServices/EmmaSubscriptionService.svc>

## Data and Document Feed Process

The EMMA Subscription Web Service Interface will provide XML files of data and PDF files of primary market disclosure documents submitted to the EMMA Submission Service through both the EMMA data submission portal and the automated submission interface.

### Data File Dissemination

Each day EMMA receives and publishes data and document submissions from underwriters, placement agents or remarketing agents and their agents. Individual publishing events (“transactions”) will normally be available for subscriber access simultaneously with the posting of publicly disseminated information to the EMMA web portal. Subscribers will first determine which transactions to retrieve by polling the data file subscription web service, at a frequency to be determined by each subscriber, by issuing a data request to receive the current day’s transaction list, based on subscriber-determined parameters<sup>2</sup>. Due to the anticipated volume and frequency of submissions, the MSRB recommends polling the subscription service not less frequently than once every 10 minutes and not more frequently than once per minute. To this end, the MSRB reserves the right to establish a maximum polling frequency as it deems appropriate. Subscribers use the list provided to retrieve the corresponding XML data files by issuing an individual data request for each transaction. Throughout the day subscribers will repeatedly request that day’s list of transactions because additional transactions will be added to the day’s list of published transactions as more submission events are processed by EMMA. Subscribers can compare the most recent transaction list against the data previously received to determine which additional transactions have not yet been requested.

### Document Dissemination

Documents submitted to EMMA typically will be available for subscriber access simultaneously with the posting of such documents to the EMMA website. Subscribers will issue document requests, at a frequency to be determined by each subscriber, to receive any available documents based on the file reference identifiers provided in the XML files disseminated to subscribers. Each document will be transmitted to subscribers as individual PDF files. Depending on the

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<sup>2</sup> Alternatively subscribers may choose to request transaction lists for prior days subject to a look-back window/period maintained by the MSRB consistent with the subscription service agreement. Because transaction dates are determined by the processing date, transaction lists from prior dates will not change. However, the data published for a primary market offering may be updated by transactions published on subsequent dates.

subscriber's parameters for issuing document requests, subscribers will be able to access documents through the EMMA Subscription Web Service Interface on an effectively real-time basis, subject to transmission limitations resulting from the potentially large size of some document files and the speed of the subscriber's connection.

## Message Processing, Schemas and Data Tags

This document refers to a series of figures and tables providing more detailed information about the EMMA Subscription Web Service Interface. A message processing overview is included in Figure 1. Information categories and available data tabs applicable to each category are included in Figures 2-6.

### Data Message

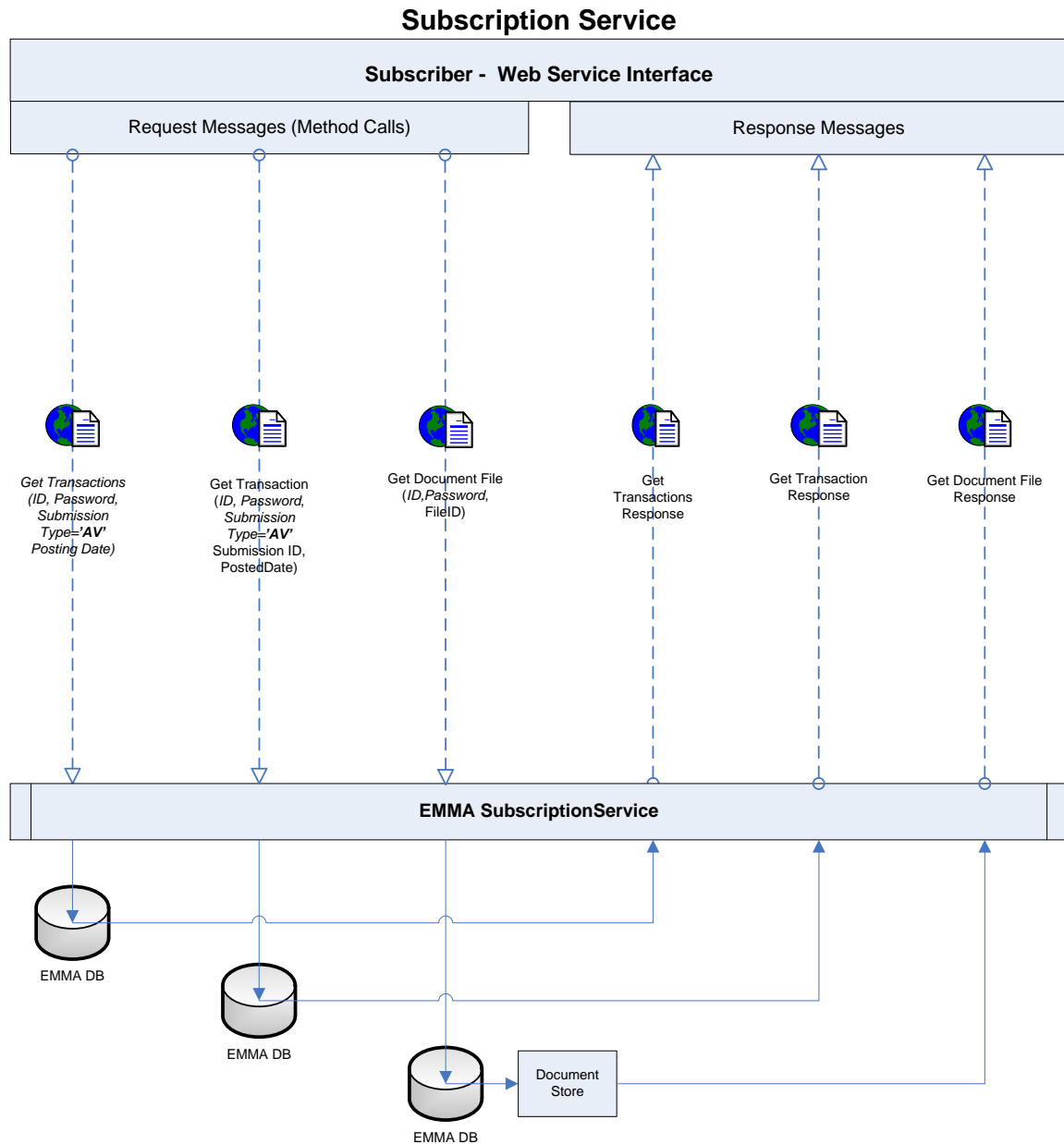
Data elements to be disseminated through the EMMA Subscription Web Service Interface will be organized in a hierarchical relationship into the following categories: (i) submission data; (ii) offering data; (iii) issue data; (iv) security data; (v) document data; (vi) file data; and (vii) limited offering contact data. These categories, and the available data tags applicable to each category, are shown in Figure 2 and are also summarized below:

- **Submission Data**
  - i. Submission identifier (uniquely identifies submission being disseminated)
  - ii. Submission status (publish, notice of cancellation of offering)
  - iii. Submission transaction date and time (indicates EMMA posting date and time)
- **Security Data**
  - i. Security type ('ARS', 'VRDO')
  - ii. Security (nine-digit CUSIP number(s) to which disclosure is applicable)
- **Document Data**
  - i. Document type (selected 'LettersOfCredit', 'StandbyBondPurchaseAgreements', etc.)
  - ii. Document required to be submitted is not available flag (selected 'True', 'False')
  - iii. Transition period flag (selected 'Yes','No')
- **File Data**
  - i. File identifier (identification number assigned by EMMA to identify the file)
  - ii. Document receive date (entered date the document was received)
  - iii. File status (entering status)
  - iv. File status date time (indicates the date and time the submission event was registered in EMMA)
  - v. File posting date (indicates the date the file was posted to the public on EMMA)

Several examples of XML files disseminating data submissions for various types of primary market disclosures and advance refunding disclosures are included herein.

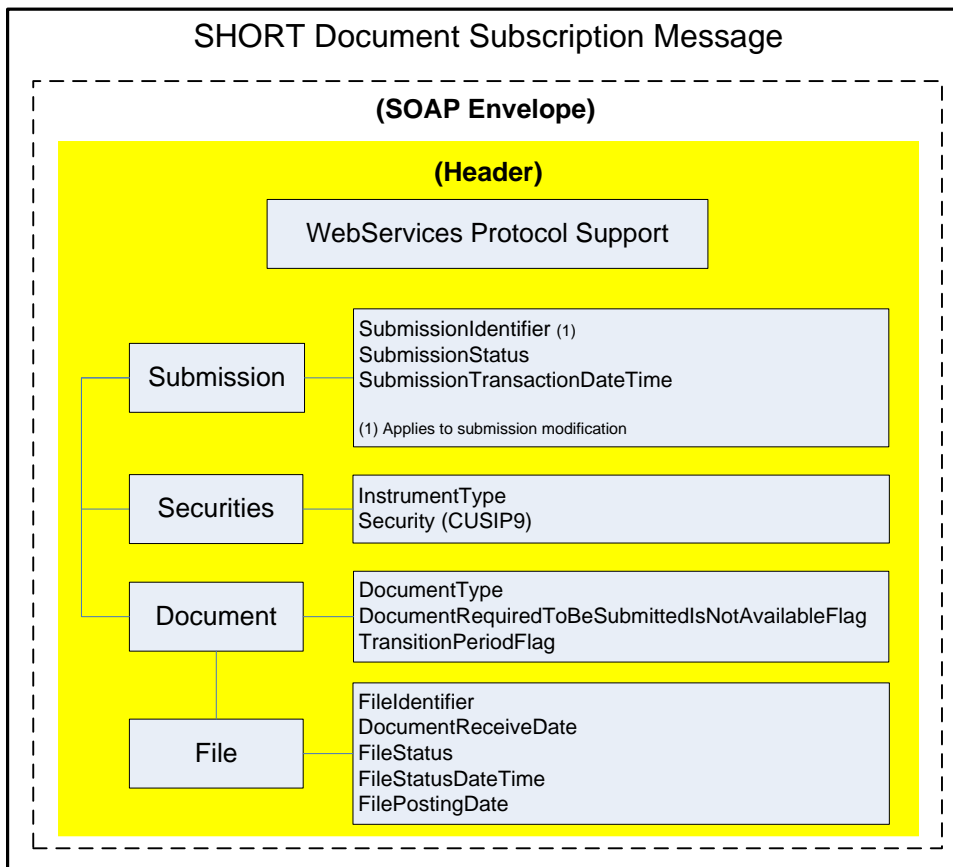
Figure 1: Message Processing Overview for the Subscription Web Service Interface

**MESSAGE PROCESSING OVERVIEW**



## Figure 2: XML Data Tag Structure

Below is the general data structure of the XML data model for SHORT Document Web Service Interface. Within each message are information containers (Submission, Issue, Securities, Document and Files) and the information types and values associated with each.



SOAP (Simple Object Access Protocol) - foundation layer of the web services protocol stack  
 MTOM (SOAP Message Transmission Optimization Mechanism) - a method of efficiently sending binary data to and from web services

## Data Tag Glossary

Table 1: Date Tag Glossary for EMMA Subscription Service

Below is a glossary of data tags represented in Figure 2 and reported via the EMMA Subscription Web Service Interface. This glossary sets out each data element's XML container, data tag, definition and data specifications, including a listing of possible enumerated values and an example of the data format.

Subscription Data Tags Description and Specification			
EMMA Subscription Service			
XML Container	Data Tag	Definition	Data Specification
Submission	Submission Identifier	Unique identifier assigned by the EMMA at time of initiation of submission (the initial submission event) and used by the submitter in connection with subsequent submission events	Type= String{Min1,Max25} ex: S212345678910
	Submission Status	Indicates the intention to publish the information in the EMMA public portal	Enumerated Value: <ul style="list-style-type: none"> <li>• Publish</li> <li>• NoticeOfCancellationOfOffering</li> </ul>
	Transaction Date Time	EMMA-assigned date and time the submission was registered in EMMA	Type=ISODateTime (CCYY-MM-DDT00:00:00) ex: 2008-12-01T13:30:00
Securities	CUSIP9	Indicates the nine-digit CUSIP number(s) to which the disclosure applies if the Security Type is CUSIP9	Type= String{Min9,Max9} ex: 123456AB7IF: Security Type is CUSIP9
	Instrument Type	Indicates the type of security being reported as either Auction Rate Security (ARS) or Variable Rate Demand Obligation (VRDO)	Enumerated Value: <ul style="list-style-type: none"> <li>• ARS</li> <li>• VRDO</li> </ul>

XML Container	Data Tag	Definition	Data Specification
Document	Document Type	Indicates type of document being submitted	<p>Enumerated Value: (VRDO)</p> <ul style="list-style-type: none"> <li>• LettersOfCredit</li> <li>• StandbyBondPurchaseAgreements</li> <li>• OtherDocumentThatEstablishesAnObligationToProvideLiquidity</li> </ul> <p>Enumerated Value: (ARS)</p> <ul style="list-style-type: none"> <li>• DocumentThatDefinesCurrentAuctionProceduresAndInterestRateSettingMechanisms</li> </ul>
	Document Required To Be Submitted Is Not Available Flag	For VRDO issues, an affirmative indication that a document required to be submitted is not available for submission notwithstanding the submitter's best efforts to obtain such document. Note, only applicable to submissions of "transition period" documents, described below.	<p>Enumerated Value:</p> <ul style="list-style-type: none"> <li>• True</li> <li>• False</li> </ul>
	Transition Period Flag	<p>Indication that a submission is being made pursuant to notice 2010-31 rule provision to provide documents for existing programs and issues as follows:</p> <p>For existing ARS programs, dealers will be required to submit the current versions of ARS documents defining current auction procedures and interest rate setting mechanisms to the SHORT System within ninety days after the effective date of the rule change. For existing VRDO issues, dealers will be required to undertake and document best efforts to obtain current versions of VRDO liquidity facility documents, including Letters of Credit, Stand-by Bond Purchase Agreements and any other document that establishes an obligation to provide liquidity, and submit such documents to the SHORT System within ninety days after the effective date of the proposed rule change.</p>	<p>Enumerated Value:</p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
File	File Identifier	EMMA-assigned unique identifier for a file	Type= String{Min1,Max25} ex: MS223986-1
	Document Receive Date	Date that the document was received NOTE: This value is not applicable for documents submitted pursuant to the transition period, described above.	Type= ISODate (CCYY-MM-DD) ex: 2008-12-08
	File Status	Indication of the active state of a file	<p>Enumerated Value:</p> <ul style="list-style-type: none"> <li>• Current</li> <li>• Archived</li> <li>• Removed</li> </ul>
	File Status Date	Indicates the date the file status was acquired	Type= ISODate (CCYY-MM-DD) ex: 2008-12-08



XML Container	Data Tag	Definition	Data Specification
	File Posting Date	The date the file was posted to the public on EMMA	Type= ISODate (CCYY-MM-DD) ex: 2008-12-08

## Sample Disclosure Data Messages

### Sample XML Data Message – Transaction List

```
"<? xml version="1.0" encoding="utf-16"?>
<ArrayOfEmmaTransaction xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <EmmaTransaction>
    <SubmissionId>X2456945</SubmissionId>
    <PostingDateTime>2014-01-10T14:14:42.640552</PostingDateTime>
  </EmmaTransaction>
  <EmmaTransaction>
    <SubmissionId>X2456946</SubmissionId>
    <PostingDateTime>2014-01-10T14:15:41.109378</PostingDateTime>
  </EmmaTransaction>
  <EmmaTransaction>
    <SubmissionId>X2456947</SubmissionId>
    <PostingDateTime>2014-01-10T14:16:32.953128</PostingDateTime>
  </EmmaTransaction>
  <EmmaTransaction>
    <SubmissionId>X2456948</SubmissionId>
    <PostingDateTime>2014-01-10T14:17:26.906253</PostingDateTime>
  </EmmaTransaction>
  <EmmaTransaction>
    <SubmissionId>X2456949</SubmissionId>
    <PostingDateTime>2014-01-10T14:18:20.203128</PostingDateTime>
  </EmmaTransaction>
  <EmmaTransaction>
    <SubmissionId>X2456950</SubmissionId>
    <PostingDateTime>2014-01-10T14:20:03.156692</PostingDateTime>
  </EmmaTransaction>
</ArrayOfEmmaTransaction>"
```

## Sample XML Data Message – SHORT Document

```
<?xml version="1.0" encoding="utf-16"?>
<Submission xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" SubmissionStatus="Publish"
SubmissionTransactionDateTime="2011-05-16T10:09:24.259383" SubmissionIdentifier="ER403798">
  <Securities InstrumentType="VRDO">
    <Security CUSIP9="96934QAA8" />
  </Securities>
  <Document DocumentType="LettersOfCredit" TransitionPeriodFlag="Yes"
DocumentRequiredToBeSubmittedIsNotAvailableFlag="False">
    <UnderlyingFiles>
      <File FileIdentifier="ER750998" FileStatus="Current" FilePostingDate="2011-05-16"
FileStatusDate="2011-05-16" />
    </UnderlyingFiles>
  </Document>
</Submission>
```

## Sample Soap Messages

### SOAP Request Message – Get Transaction List

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope" xmlns:a="http://www.w3.org/2005/08/addressing"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransactions</a:Action>
    <a:MessageID>urn:uuid:10e93c71-fa08-4729-a81d-5a6ce56cd71b</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
    <a:To s:mustUnderstand="1">https:// emmaservices
/SubscriberServices/EmmaSubscriptionService.svc/regulator</a:To>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T15:19:36.055Z</u:Created>
        <u:Expires>2014-02-14T15:24:36.055Z</u:Expires>
      </u:Timestamp>
      <c:SecurityContextToken u:Id="uuid-8a119f90-be65-4406-a6d2-6131f8e9a308-1"
xmlns:c="http://schemas.xmlsoap.org/ws/2005/02/sc">
        <c:Identifier>urn:uuid:32bcf390-4019-4b03-b483-de99bfd2434f</c:Identifier>
      </c:SecurityContextToken>
      <Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
        <SignedInfo>
          <CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-
exc-c14n#"></CanonicalizationMethod>
          <SignatureMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#hmac-sha1"></SignatureMethod>
          <Reference URI="#_0">
            <Transforms>
              <Transform
Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"></Transform>
            </Transforms>
            <DigestMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"></DigestMethod>
          </Reference>
          <DigestValue>j2n1HKcb1N0J2XdBHh4h8PyHEK0=</DigestValue>
        </SignedInfo>
        <SignatureValue>9wZqUdQaKFqTO3AebPt8mOpfq1w=</SignatureValue>
        <KeyInfo>
          <o:SecurityTokenReference>
            <o:Reference
ValueType="http://schemas.xmlsoap.org/ws/2005/02/sc/sct" URI="#uuid-8a119f90-be65-4406-a6d2-6131f8e9a308-
1"></o:Reference>
          </o:SecurityTokenReference>
        </KeyInfo>
      </Signature>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransactions /">
      <submissionType>AV</submissionType>
      <postingDate>2014-02-13T00:00:00</postingDate>
    </GetTransactions>
  </s:Body>

```

```
</s:Envelope>
```

## SOAP Response Message – Return Transaction List

```
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransactionsResponse</a:Action>
    <ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">05803968-d604-4cd1-bc0c-
4500a0b6a0b1</ActivityId<http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E058
03968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId>>
    <a:RelatesTo>urn:uuid:10e93c71-fa08-4729-a81d-5a6ce56cd71b</a:RelatesTo>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T15:19:37.361Z</u:Created>
        <u:Expires>2014-02-14T15:24:37.361Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransactionsResponse /">
      <GetTransactionsResult
xmlns:b="http://schemas.datacontract.org/2004/07/SubscriberServices.ViewModels"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RequestId>bd49cbc6-19fa-42d5-8c9e-1d42874bbfb5</b:RequestId>
        <b:RequestedPostingDate>2014-02-
13T00:00:00</b:RequestedPostingDate>
        <b:RequestedSubmissionType>PM</b:RequestedSubmissionType>
        <b:StatusCode>200</b:StatusCode>
        <b:Transactions>
          <b:EmmaTransaction>
            <b:PostingDateTime>2014-02-
13T15:06:11.765471</b:PostingDateTime>
            <b:SubmissionId>X2457317</b:SubmissionId>
          </b:EmmaTransaction>
        </b:Transactions>
      </GetTransactionsResult>
    </GetTransactionsResponse>
  </s:Body>
</s:Envelope>
```

## SOAP Request Message – Get Transaction Data

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope" xmlns:a="http://www.w3.org/2005/08/addressing"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransaction</a:Action>
    <a:MessageID>urn:uuid:28c673c5-bc51-4328-8164-5f1facac0c55</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
    <a:To s:mustUnderstand="1">https:// SubscriberServices
/SubscriberServices/EmmaSubscriptionService.svc/regulator</a:To>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T16:00:26.675Z</u:Created>
        <u:Expires>2014-02-14T16:05:26.675Z</u:Expires>
      </u:Timestamp>
      <c:SecurityContextToken u:Id="uuid-a3382ec4-feac-4655-801c-05e31799db60-3"
xmlns:c="http://schemas.xmlsoap.org/ws/2005/02/sc">
        <c:Identifier>urn:uuid:9ee66f39-1c88-4b9e-b6e7-91df2192f8e8</c:Identifier>
      </c:SecurityContextToken>
      <Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
        <SignedInfo>
          <CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-
exc-c14n#"></CanonicalizationMethod>
          <SignatureMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#hmac-sha1"></SignatureMethod>
          <Reference URI="#_0">
            <Transforms>
              <Transform
Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"></Transform>
            </Transforms>
            <DigestMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"></DigestMethod>
            <DigestValue>8hnNnopqij5cT6MbQnGe1AR4eU4=</DigestValue>
          </Reference>
        </SignedInfo>
        <SignatureValue>dxB5un/Q1/iMI0UcLwt7mxNnRPQ=</SignatureValue>
        <KeyInfo>
          <o:SecurityTokenReference>
            <o:Reference
ValueType="http://schemas.xmlsoap.org/ws/2005/02/sc/sct" URI="#uuid-a3382ec4-feac-4655-801c-05e31799db60-
3"></o:Reference>
          </o:SecurityTokenReference>
        </KeyInfo>
      </Signature>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransaction /">
      <submissionType>AV</submissionType>
      <postingDateTime>2014-02-13T15:06:11</postingDateTime>
      <submissionId>X2457317</submissionId>
    </GetTransaction>
  </s:Body>
</s:Envelope>

```

## SOAP Response Message – Return Transaction Data

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransactionResponse</a:Action>
    <ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">05803968-d604-4cd1-bc0c-
4500a0b6a0b1</ActivityId<http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E058
03968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId>>
    <a:RelatesTo>urn:uuid:28c673c5-bc51-4328-8164-5f1facac0c55</a:RelatesTo>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T16:00:27.065Z</u:Created>
        <u:Expires>2014-02-14T16:05:27.065Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransactionResponse /">
      <b:RequestId>508381b9-2f99-41bf-937e-
3a477f36b164</b:RequestId>
      <b:RequestedPostingDateTime>2014-02-
13T15:06:11</b:RequestedPostingDateTime>
      <b:RequestedSubmissionId>Q2457317</b:RequestedSubmissionId>
      <b:RequestedSubmissionType>AV</b:RequestedSubmissionType>
      <b:ReturnData> <?xml version="1.0" encoding="utf-16"?>
<Submission xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" SubmissionStatus="Publish"
SubmissionTransactionDateTime="2011-05-16T10:09:24.259383" SubmissionIdentifier="ER403798"
xmlns="http://emma.msrb.org/schemas/subscriptionmessages/types">
  <Securities InstrumentType="VRDO">
    <Security CUSIP9="96934QAA8" />
  </Securities>
  <Document DocumentType="LettersOfCredit" TransitionPeriodFlag="Yes"
DocumentRequiredToBeSubmittedIsNotAvailableFlag="False">
    <UnderlyingFiles>
      <File FileIdentifier="ER750998" FileStatus="Current" FilePostingDate="2011-05-16"
FileStatusDate="2011-05-16" />
    </UnderlyingFiles>
  </Document>
</Submission> </b:ReturnData>
      <b:StatusCode>200</b:StatusCode>
    <GetTransactionResult
xmlns:b="http://schemas.datacontract.org/2004/07/SubscriberServices.ViewModels"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      </GetTransactionResult>
    </GetTransactionResponse>
  </s:Body>
</s:Envelope>

```

## SOAP Request Message – Get Document File

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope" xmlns:a="http://www.w3.org/2005/08/addressing"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetFile</a:Action>
    <a:MessageID>urn:uuid:ac83a5e7-2b04-40d9-b057-35088f10cfa6</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
    <a:To
s:mustUnderstand="1">https://localhost/SubscriberServices/EmmaSubscriptionService.svc/regulator</a:To>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-18T12:39:08.844Z</u:Created>
        <u:Expires>2014-02-18T12:44:08.844Z</u:Expires>
      </u:Timestamp>
      <c:SecurityContextToken u:Id="uuid-85419c92-6d0c-4c44-b3f9-7ec29e332d60-1"
xmlns:c="http://schemas.xmlsoap.org/ws/2005/02/sc">
        <c:Identifier>urn:uuid:634f54cd-2dfe-4cd3-9b90-02bd2206a135</c:Identifier>
      </c:SecurityContextToken>
      <Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
        <SignedInfo>
          <CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-
exc-c14n#"></CanonicalizationMethod>
          <SignatureMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#hmac-sha1"></SignatureMethod>
          <Reference URI="#_0">
            <Transforms>
              <Transform
Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"></Transform>
            </Transforms>
            <DigestMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"></DigestMethod>
            <DigestValue>3Lu4aDUYzAv3PDw/S5PWW1HuOfM=</DigestValue>
          </Reference>
        </SignedInfo>
        <SignatureValue>PbKzew2ZS/n3JbMER0IkMjB690Y=</SignatureValue>
        <KeyInfo>
          <o:SecurityTokenReference>
            <o:Reference
ValueType="http://schemas.xmlsoap.org/ws/2005/02/sc/sct" URI="#uuid-85419c92-6d0c-4c44-b3f9-7ec29e332d60-
1"></o:Reference>
          </o:SecurityTokenReference>
        </KeyInfo>
      </Signature>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetFile /">
      <fileId>EA617326</fileId>
    </GetFile>
  </s:Body>
</s:Envelope>

```



## SOAP Response Message – Return Document File

<!-- Response to a file request is the file itself. -->

## SOAP Response Message – Error Return - Transaction

```
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransactionResponse</a:Action>
    <ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">05803968-d604-4cd1-bc0c-
4500a0b6a0b1</ActivityId<http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E058
03968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId>>
    <a:RelatesTo>urn:uuid:d1ebc3e1-5627-4eaf-893f-1a6500029f7b</a:RelatesTo>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T17:59:17.608Z</u:Created>
        <u:Expires>2014-02-14T18:04:17.608Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransactionResponse xmlns="http://emma.msrb.org/schemas/subscriber-service">
      <GetTransactionsResult
xmlns:b="http://schemas.datacontract.org/2004/07/SubscriberServices.ViewModels"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RequestId>46ac4110-ce41-4165-99ce-b13830318051</b:RequestId>
        <b:RequestedPostingDate>2013-05-
28T00:00:00</b:RequestedPostingDate>
        <b:RequestedSubmissionType>C4</b:RequestedSubmissionType>
        <b:StatusCode>400</b:StatusCode>
        <b:Transactions i:nil="true"></b:Transactions>
      </GetTransactionsResult>
    </GetTransactionsResponse>
  </s:Body>
</s:Envelope>
```

## SOAP Response Message – Error Return - File

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetFileFileRetrievalFaultFault</a:Action>
    <a:RelatesTo>urn:uuid:69604772-b4cd-48f2-9dff-083aaa381ae0</a:RelatesTo>
    <ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">05803968-d604-4cd1-bc0c-
4500a0b6a0b1</ActivityId<http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E058
03968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId>>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T18:02:02.443Z</u:Created>
        <u:Expires>2014-02-14T18:07:02.443Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <s:Fault>
      <s:Code>
        <s:Value>s:Sender</s:Value>
      </s:Code>
      <s:Reason>
        <s:Text xml:lang="en-US">The creator of this fault did not specify a
Reason.</s:Text>
      </s:Reason>
      <s:Detail>
        <FileRetrievalFault
xmlns="http://schemas.datacontract.org/2004/07/SubscriberServices"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
          <RequestedFileId>EA617356</RequestedFileId>
          <StatusCode>404</StatusCode>
        </FileRetrievalFault>
      </s:Detail>
    </s:Fault>
  </s:Body>
</s:Envelope>

```

## SOAP Response Message – Error Return – Authentication Failed

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">http://emma.msrb.org/schemas/subscriber-
service/IEmmaSubscriptionService/GetTransactionsResponse</a:Action>
    <ActivityId CorrelationId="39e2e1ca-2924-4aa6-9c1c-86b9254970d1"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">05803968-d604-4cd1-bc0c-
4500a0b6a0b1</ActivityId<http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics%22%3E058
03968-d604-4cd1-bc0c-4500a0b6a0b1%3C/ActivityId>>
    <a:RelatesTo>urn:uuid:d1ebc3e1-5627-4eaf-893f-1a6500029f7b</a:RelatesTo>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2014-02-14T17:59:17.608Z</u:Created>
        <u:Expires>2014-02-14T18:04:17.608Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <GetTransactionsResponse /">
      <GetTransactionsResult
xmlns:b="http://schemas.datacontract.org/2004/07/SubscriberServices.ViewModels"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RequestId>46ac4110-ce41-4165-99ce-b13830318051</b:RequestId>
        <b:RequestedPostingDate>2013-05-
28T00:00:00</b:RequestedPostingDate>
        <b:RequestedSubmissionType>AV</b:RequestedSubmissionType>
        <b:StatusCode>401</b:StatusCode>
        <b:Transactions i:nil="true"></b:Transactions>
      </GetTransactionsResult>
    </GetTransactionsResponse>
  </s:Body>
</s:Envelope>

```

## Response Messages

Table 2: EMMA Subscription Response Messages

EMMA will generally follow the standard published Hypertext Transfer Protocol (HTTP) response status codes when reporting the status of subscription requests. Listed below are typical EMMA response codes, with descriptions based on specific situations, however, other application specific codes may be returned from time to time without prior notice.

Subscription Response Codes EMMA Subscription Web Service Interface	
Response Code	Description
200	OK
400	Request is not parse-able or bad request
401	Authentication Failed
402	The request is outside the look-back window
403	You are not authorized to subscribe to the submission type requested.
404	Not Found - the reference provided is valid
429	Request frequency violation – as applicable
500	System Error
550	Not Found - the file requested is not found