



Municipal Securities Rulemaking Board

Short-term Obligation Rate
Transparency System

Subscriber Manual

Version 1.0
August 10, 2010

Revision History

Version	Date	Major Changes
1.0	August 10, 2010	Initial version.

Table of Contents

OTHER RESOURCES	1
CONTACT INFORMATION	1
INTRODUCTION	2
BACKGROUND	2
SPECIFICATIONS FOR THE SHORT SUBSCRIPTION SERVICE	2
MESSAGE PROCESSING OVERVIEW	4
DATA TAG MAPPING	5
DATA MESSAGE & TYPE DEFINITION SCHEMAS.....	6
XML MESSAGE SCHEMAS	8
SUBSCRIBERREQUEST.XSD	8
SUBSCRIBERRESPONSE.XSD.....	9
COMMON.XSD.....	12
SUBMITTERINPUT.XSD	19
DATA TAG GLOSSARY	24
SAMPLE XML MESSAGES	28

Other Resources

MSRB Public Web Site: www.msrb.org

Rule G-34(c): www.msrb.org/Rules-and-Interpretations/MSRB-Rules/General/Rule-G-34.aspx

Contact Information

MSRB Market Information Department

703-797-6668

MarketInformationGeneralMailbox@msrb.org

Municipal Securities Rulemaking Board

1900 Duke Street

Suite 600

Alexandria, VA 22314

Tel: 703-797-6600

Fax: 703-797-6700

INTRODUCTION

In this document are specifications for the subscription to the information collected by the Municipal Securities Rulemaking Board's (MSRB) Short-term Obligation Rate Transparency ("SHORT") System. The SHORT System is a facility of the MSRB for the collection and dissemination of information about securities bearing interest at short-term rates, which include Auction Rate Securities ("ARS") and Variable Rate Demand Obligations ("VRDOs"). MSRB Rule G-34(c), on variable rate security market information, requires dealers to report to the SHORT System the current interest rate and certain descriptive information about ARS and VRDOs following an ARS auction and VRDO interest rate reset.

The SHORT subscription service became operational on September 30, 2010. The SHORT subscription service is provided through computer-to-computer data streams utilizing XML files for data. Information submitted to the SHORT System also is posted to the MSRB's Electronic Municipal Market Access (EMMA) web portal, at www.emma.msrb.org, pursuant to the EMMA short-term obligation rate transparency service.

BACKGROUND

The SHORT subscription service is designed to make all information collected by the SHORT System available to subscribers simultaneously with the posting of such information to the EMMA web portal. Subscribers to the SHORT subscription service are required to enter into a subscription agreement with the MSRB and are subject to the terms and conditions thereof. These subscription specifications provide a general background on the nature of submissions made to the SHORT System service and disseminated through the SHORT subscription service.

SPECIFICATIONS FOR THE SHORT SUBSCRIPTION SERVICE

The MSRB will expose a web service to allow subscribers to receive SOAP (Simple Object Access Protocol) standard XML (extensible markup language) messages using secure, computer-to-computer communications. This service 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.

MSRB will also expose a Beta version of SHORT subscription service. A beta version of the SHORT subscription service will serve as a platform for subscribers to conduct tests to ensure proper programming and configuration of their applications for receiving SHORT System information. ***Data 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 site will require a separate set-up. To

inquire about the procedures for accessing the beta site, contact the Market Information Department at (703) 797-6668.

FIGURE 1

MESSAGE PROCESSING OVERVIEW

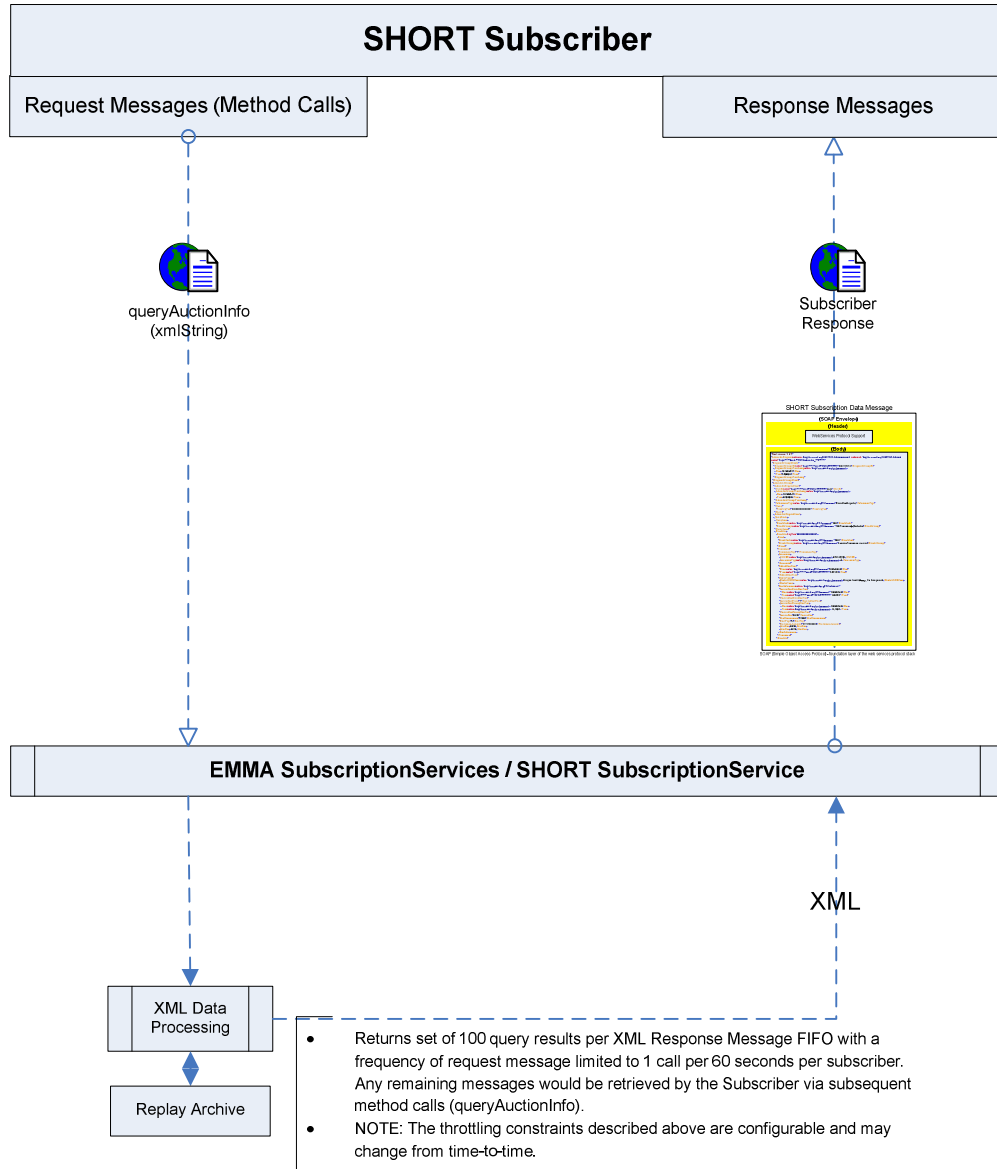
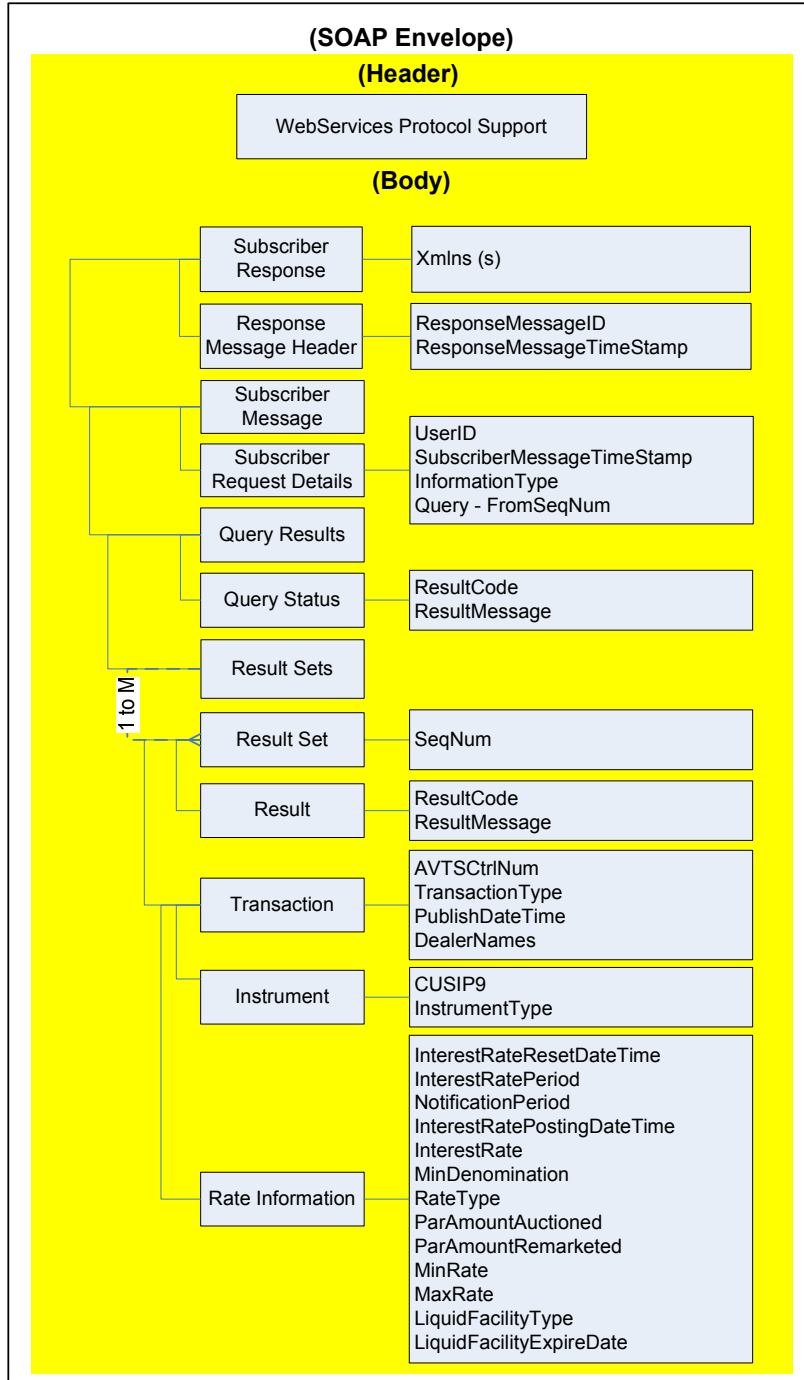


FIGURE 2

DATA TAG MAPPING

SHORT Subscription Data Message



SOAP (Simple Object Access Protocol) - foundation layer of the web services protocol stack

FIGURE 3**DATA MESSAGE & TYPE DEFINITION SCHEMAS**

Set forth below is a schema (.xsd) associated with both subscription request and response data messages.

SHORT Subscriber Request Message
Method Call (queryAuctionInfo)

(SOAP)

(Header)

xmlString

```
<?xml version="1.0" encoding="utf-8"?>
<SubscriberRequest xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://www.msrb.org/avts/subscriber">
  <Subscriber>
    <UserID xmlns="http://www.msrb.org/avts/common"></UserID>
    <SubscriberMessageTimeStamp xmlns="http://www.msrb.org/avts/common">
      <Date>2010-05-18</Date>
      <Time>04:32:49</Time>
    </SubscriberMessageTimeStamp>
    <InformationType xmlns="http://www.msrb.org/avts/common">ResetRate/Liquidity</InformationType>
    <Password xmlns="http://www.msrb.org/avts/common"></Password>
  </Subscriber>
  <Query>
    <FromSeqNum>0000000000000001</FromSeqNum>
  </Query>
</SubscriberRequest>
```

SHORT Subscription Response Data Message



SOAP (Simple Object Access Protocol) - foundation layer of the web services protocol stack

XML MESSAGE SCHEMAS

Detailed below are Subscriber Request, Subscriber Response, Common, and Submitter Input schemas.

SubscriberRequest.xsd

```
<xsd:schema elementFormDefault="qualified"
  xmlns="http://www.msrb.org/avts/subscriber"
  xmlns:avts="http://www.msrb.org/avts/common"
  targetNamespace="http://www.msrb.org/avts/subscriber"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">

  <xsd:import namespace="http://www.msrb.org/avts/common"
    schemaLocation="Common.xsd" />

  <xsd:element name="SubscriberRequest">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="Subscriber"
          type="MSRBSubscriber" />
        <xsd:element ref="Query" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>

  <xsd:complexType name="MSRBSubscriber">
    <xsd:complexContent>
      <xsd:extension base="avts:Subscriber">
        <xsd:sequence>
          <xsd:element ref="avts:Password" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:element name="Query">
```

```
<xsd:complexType>
  <xsd:sequence>
    <xsd:element name="FromSeqNum" type="avts:FromSeqNum"/>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
</xsd:schema>
```

SubscriberResponse.xsd

```
<xsd:schema xmlns="http://www.msrb.org/avts/subscriber_response"
  xmlns:avts="http://www.msrb.org/avts/common"
  xmlns:submitter="http://www.msrb.org/avts/submitter"
  elementFormDefault="qualified"
  targetNamespace="http://www.msrb.org/avts/subscriber_response"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">

  <xsd:import namespace="http://www.msrb.org/avts/common"
    schemaLocation="Common.xsd" />

  <xsd:import namespace="http://www.msrb.org/avts/submitter"
    schemaLocation="SubmitterInput.xsd" />

  <xsd:complexType name="SubscriberRequestDetails">
    <xsd:complexContent>
      <xsd:extension base="avts:Subscriber">
        <xsd:sequence>
          <xsd:element ref="Query" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:element name="SubscriberMessage">
    <xsd:complexType>
```

```

        <xsd:sequence>
            <xsd:element name="SubscriberRequestDetails"
                type="SubscriberRequestDetails" />
            <xsd:element ref="QueryResults" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="QueryResults">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="QueryStatus" type="avts:Result" />
            <xsd:element ref="ResultSets" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ResultSets">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element minOccurs="0" maxOccurs="unbounded"
                name="ResultSet" type="ResultSet" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:complexType name="ResultSet">
    <xsd:sequence>
        <xsd:element name="Result" type="avts:Result" />
        <xsd:element name="Transaction"
            type="PublishedTransaction" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
    <xsd:attribute name="SeqNum" type="avts:FromSeqNum"
        use="required" />
</xsd:complexType>

<xsd:element name="DealerNames">
<!-- If there are no transactions, DealerNames could be empty -->
    <xsd:complexType>

```

```
        <xsd:sequence>
            <xsd:element minOccurs="0" maxOccurs="unbounded"
                ref="avts:DealerMSRBName" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:complexType name="PublishedTransaction">
    <xsd:sequence>
        <xsd:element name="TransactionType"
            type="avts:TransactionType" />
        <xsd:element name="Instrument" type="avts:Instrument" />
        <xsd:element name="PublishDateTime" type="avts:BasicDateTime" />
        <xsd:element ref="DealerNames" />
        <xsd:element ref="submitter:RateInformation" />
    </xsd:sequence>
    <xsd:attribute name="AVTSCtrlNum" type="avts:AVTSCtrlNum"
        use="required" />
</xsd:complexType>

<xsd:element name="Query">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="FromSeqNum" type="avts:FromSeqNum" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name="SubscriberResponse">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="ResponseMessageHeader"
                type="avts:ResponseMessageHeader" />
            <xsd:element ref="SubscriberMessage" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
```

```
</xsd:schema>
```

Common.xsd

```
<xsd:schema elementFormDefault="qualified"
  targetNamespace="http://www.msrb.org/avts/common"
  xmlns="http://www.msrb.org/avts/common"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:jaxb="http://java.sun.com/xml/ns/jaxb"
  xmlns:xjc="http://java.sun.com/xml/ns/jaxb/xjc"
  jaxb:extensionBindingPrefixes="xjc" jaxb:version="1.0">

  <xsd:annotation>
    <xsd:appinfo>
      <jaxb:globalBindings>
        <xjc:serializable />
      </jaxb:globalBindings>
    </xsd:appinfo>
  </xsd:annotation>

  <xsd:element name="DealerMSRBNum">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:pattern value="[a-zA-Z0-9]*" />
        <xsd:minLength value="5" />
        <xsd:maxLength value="15" />
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:element>

  <xsd:element name="DealerMSRBName">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:pattern value="[a-zA-Z0-9,.,:]*" />
        <xsd:minLength value="5" />
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:element>
</xsd:schema>
```

```
                <xsd:maxLength value="90" />
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:element>

    <xsd:complexType name="AVTSUser">
        <xsd:sequence>
            <xsd:element name="UserID" type="UserID" />
            <xsd:element ref="Password" />
        </xsd:sequence>
    </xsd:complexType>

    <xsd:simpleType name="UserID">
        <xsd:restriction base="xsd:string">
            <xsd:minLength value="3" />
            <xsd:maxLength value="15" />
        </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="Period">
        <xsd:restriction base="xsd:integer">
            <xsd:minInclusive value="0" />
            <xsd:maxInclusive value="999" />
        </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="Rate">
        <xsd:restriction base="xsd:decimal">
            <xsd:pattern value="[0-9]{1,2}\.[0-9]{1,3}" />
        </xsd:restriction>
    </xsd:simpleType>

    <xsd:element name="Password">
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:minLength value="8" />
                <xsd:maxLength value="50" />
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:element>

```



```
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:element>

    <xsd:simpleType name="SubmissionCtrlNum">
      <xsd:restriction base="xsd:string">
        <xsd:pattern value="[a-zA-Z0-9]{16}" />
        <xsd:minLength value="16" />
        <xsd:maxLength value="16" />
      </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="AVTSCtrlNum">
      <xsd:restriction base="xsd:string">
        <xsd:pattern value="[a-zA-Z0-9]{16}" />
        <xsd:minLength value="16" />
        <xsd:maxLength value="16" />
      </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="InformationType">
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="ResetRate/Liquidity" />
        <xsd:enumeration value="Bidding" />
      </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="InstrumentType">
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="A" />
        <xsd:enumeration value="V" />
      </xsd:restriction>
    </xsd:simpleType>

    <xsd:element name="CUSIP9">
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
```

```
                <xsd:pattern value="[a-zA-Z0-9]{9}" />
                <xsd:minLength value="9" />
                <xsd:maxLength value="9" />
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:element>

    <xsd:complexType name="Instrument">
        <xsd:sequence>
            <xsd:element ref="CUSIP9" />
            <xsd:element name="InstrumentType" type="InstrumentType" />
        </xsd:sequence>
    </xsd:complexType>

    <xsd:simpleType name="BasicTime">
        <xsd:restriction base="xsd:string">
            <xsd:pattern
                value="(0[0-9]|[1-5][0-9]):(0[0-9]|[1-5][0-9]):(0[0-9]|[1-5][0-9])" />
        </xsd:restriction>
    </xsd:simpleType>

    <xsd:simpleType name="BasicDate">
        <xsd:restriction base="xsd:string">
            <xsd:pattern
                value="(19|20)\d\d-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])" />
        </xsd:restriction>
    </xsd:simpleType>

    <xsd:complexType name="BasicDateTime">
        <xsd:sequence>
            <xsd:annotation>
                <xsd:documentation>
                    All Dates will be in EST. Date and Time fields have
                    been broken up into components so that Timezone is
                    not used.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:sequence>
    </xsd:complexType>
```

```
        <xsd:element name="Date" type="BasicDate" />
        <xsd:element name="Time" type="BasicTime" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="InterestRateResetDateTime">
    <xsd:complexContent>
        <xsd:extension base="BasicDateTime" />
    </xsd:complexContent>
</xsd:complexType>

<xsd:complexType name="MessageTimeStamp">
    <xsd:complexContent>
        <xsd:extension base="BasicDateTime" />
    </xsd:complexContent>
</xsd:complexType>

<xsd:simpleType name="TransactionType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="I" />
        <xsd:enumeration value="M" />
        <xsd:enumeration value="C" />
    </xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="Submitter">
    <xsd:sequence>
        <xsd:element name="UserID" type="UserID" />
        <xsd:element name="SubmitterMessageTimeStamp"
            type="MessageTimeStamp" />
        <xsd:element name="SubmissionCtrlNum"
            type="SubmissionCtrlNum" />
        <xsd:element name="InformationType" type="InformationType" />
    </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="FromSeqNum">
```

```
<xsd:restriction base="xsd:string">
  <xsd:pattern value="[0-9]{16}" />
  <xsd:minLength value="16" />
  <xsd:maxLength value="16" />
</xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="Subscriber">
  <xsd:sequence>
    <xsd:element name="UserID" type="UserID" />
    <xsd:element name="SubscriberMessageTimeStamp"
      type="MessageTimeStamp" />
    <xsd:element name="InformationType" type="InformationType" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Results">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded"
      name="Result" type="Result" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Result">
  <xsd:sequence>
    <xsd:element name="ResultCode">
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:pattern value="[0-9,A-Z]{4}" />
          <xsd:minLength value="4" />
          <xsd:maxLength value="4" />
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:element>
    <xsd:element name="ResultMessage" type="xsd:string" />
  </xsd:sequence>
</xsd:complexType>
```

```
<xsd:simpleType name="MessageID">
  <xsd:restriction base="xsd:string">
    <xsd:pattern value="[0-9]{10}" />
    <xsd:minLength value="10" />
    <xsd:maxLength value="10" />
  </xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="ResponseMessageHeader">
  <xsd:sequence>
    <xsd:element name="ResponseMessageID" type="MessageID" />
    <xsd:element name="ResponseMessageTimeStamp"
      type="BasicDateTime" />
  </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="RateType">
  <xsd:annotation>
    <xsd:documentation>
      ARS M – Max Rate H – All Hold Rate A – Set by Auction
      VRDO M – Max Rate F – Set by Formula R – Set by Agent
    </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="M" />
    <xsd:enumeration value="H" />
    <xsd:enumeration value="A" />
    <xsd:enumeration value="F" />
    <xsd:enumeration value="R" />
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="LiquidityFacilityType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="P" />
    <xsd:enumeration value="L" />
  </xsd:restriction>
</xsd:simpleType>
```

```
        </xsd:restriction>
    </xsd:simpleType>
</xsd:schema>
```

SubmitterInput.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema elementFormDefault="qualified"
  xmlns:avts="http://www.msrb.org/avts/common"
  xmlns="http://www.msrb.org/avts/submitter"
  targetNamespace="http://www.msrb.org/avts/submitter"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">

  <xsd:import namespace="http://www.msrb.org/avts/common"
    schemaLocation="Common.xsd" />

  <xsd:element name="SubmitterInput">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="Submitter" type="MSRBSubmitter" />
        <xsd:element name="Transactions" type="Transactions" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>

  <xsd:complexType name="MSRBSubmitter">
    <xsd:complexContent>
      <xsd:extension base="avts:Submitter">
        <xsd:sequence>
          <xsd:element ref="avts:Password" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:element name="Dealers">
    <xsd:complexType>
```

```
        <xsd:sequence>
            <xsd:element minOccurs="1" maxOccurs="unbounded"
                ref="avts:DealerMSRBNum" />
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name="InterestRate" type="avts:Rate" />

<xsd:simpleType name="RateTypeNC">
    <xsd:union>
        <xsd:simpleType>
            <xsd:restriction base="avts:Rate" />
        </xsd:simpleType>
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:enumeration value="NC" />
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:union>
</xsd:simpleType>

<xsd:simpleType name="MinDenomination">
    <xsd:restriction base="xsd:decimal">
        <xsd:minInclusive value="0"/>
        <xsd:totalDigits value="9" />
    </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="InterestRatePeriod">
    <xsd:restriction base="avts:Period" />
</xsd:simpleType>

<xsd:simpleType name="NotificationPeriod">
    <xsd:restriction base="avts:Period" />
</xsd:simpleType>
```

```
<xsd:complexType name="InterestRatePostingDateTime">
  <xsd:complexContent>
    <xsd:extension base="avts:BasicDateTime" />
  </xsd:complexContent>
</xsd:complexType>

<xsd:simpleType name="ParAmountAuctioned">
  <xsd:restriction base="xsd:decimal">
    <xsd:minInclusive value="0" />
    <xsd:totalDigits value="10" />
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="ParAmountRemarketed">
  <xsd:restriction base="xsd:decimal">
    <xsd:minInclusive value="0" />
    <xsd:totalDigits value="10" />
  </xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="Transactions">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded"
      name="Transaction" type="Transaction" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Transaction">
  <xsd:sequence>
    <xsd:element name="TransactionType"
      type="avts:TransactionType" />
    <xsd:element name="Instrument" type="avts:Instrument" />
    <xsd:element ref="Dealers" />
    <xsd:element ref="RateInformation" />
  </xsd:sequence>
</xsd:complexType>
```



```
<xsd:element name="LiquidityFacilityExpireDate"
  type="avts:BasicDate" />
<xsd:element name="LiquidityFacility">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="LiquidityFacilityType"
        type="avts:LiquidityFacilityType" />
      <xsd:element ref="LiquidityFacilityExpireDate" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="LiquidityFacilities">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="unbounded"
        ref="LiquidityFacility" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="RateInformation">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="InterestRateResetDateTime"
        type="avts:InterestRateResetDateTime" />
      <xsd:element name="InterestRatePeriod"
        type="InterestRatePeriod" />
      <xsd:choice>
        <xsd:element name="NotificationPeriod"
          type="NotificationPeriod" />
        <xsd:element name="InterestRatePostingDateTime"
          type="InterestRatePostingDateTime" />
      </xsd:choice>
      <xsd:element ref="InterestRate" />
      <xsd:element name="MinDenomination" type="MinDenomination"/>
      <xsd:element name="RateType" type="avts:RateType" />
      <xsd:element minOccurs="0" maxOccurs="1"
        name="ParAmountAuctioned" type="ParAmountAuctioned"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element minOccurs="0" maxOccurs="1"
  name="ParAmountRemarketed" type="ParAmountRemarketed"/>
<xsd:element minOccurs="0" maxOccurs="1" name="MinRate"
  type="RateTypeNC" />
<xsd:element minOccurs="0" maxOccurs="1" name="MaxRate"
  type="RateTypeNC" />
<xsd:element minOccurs="0" maxOccurs="1"
  ref="LiquidityFacilities" />
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
</xsd:schema>
```

FIGURE 4

DATA TAG GLOSSARY

**Subscription Data Tags
Description and Specification**

SHORT Subscription Service

XML Container	Data Tag	Definition	Data Specification
Response Message Header	Response Message ID	Unique identifier assigned by SHORT at the time of message generation	String{Min10,Max10} ex : 0001909931
	Response Message Time Stamp	All Dates will be in Eastern Time (ET). Date and Time fields have been broken up into components so that Timezone is not used.	Date – <i>yyyy-mm-dd</i> ex: 2010-04-27 Time – <i>hh24:mi:ss</i> ex: 15:00:00
Subscriber Request Details	User ID	Unique identifier assigned by MSRB	String{Min3,Max15}
	Subscriber Message Time Stamp	All Dates will be in Eastern Time (ET). Date and Time fields have been broken up into components so that Timezone is not used.	Date – <i>yyyy-mm-dd</i> ex: 2010-04-27 Time – <i>hh24:mi:ss</i> ex: 15:00:00
	Information Type	Generally a response will relate to reset rate / liquidity information, but may eventually include bidding information.	Enumerated Value: • ResetRate/Liquidity • Bidding
	Query – From Seq Num	The beginning sequence number submitted by the subscriber to initiate a query response message.	String{Min16,Max16} Ex : 0000000000000001

XML Container	Data Tag	Definition	Data Specification
Query Status	Result Code	A status code of the query in response to a subscriber request.	String{Min4,Max4} Ex : S001
	Result Message	A status message of the query in response to a subscriber request. Used to indicate request or system status (i.e., request processed successfully or an exception is being reported such as system busy).	String ex: 100 Transaction(s) Included
Result Set	Seq Num	An incremental system generated sequence number assigned to each reported transaction included in the response message beginning with the FromSeqNum sequentially indexing to the final transaction.	String{Min16,Max16} Ex : 0000000000001100
Result	Result Code	A transaction status code in response to a subscriber request.	String{Min4,Max4} Ex : S001
	Result Message	A status message of the transaction in response to a subscriber request. Used to indicate transaction level status (i.e., request processed successfully).	String ex: Success: Transaction retrieved
Transaction	Transaction Type	Dealer supplied transaction type indications that may from time-to-time include modification or cancellation notifications.	Enumerated Value: • I - Instrument • M – Modify • C - Cancel
	Publish Date Time	All Dates will be in Eastern Time (ET). Date and Time fields have been broken up into components so that Timezone is not used.	Date – yyyy-mm-dd ex: 2009-02-04 Time – hh24:mi:ss ex: 14:00:00
	Dealer Names	The identity of the ARS Program Dealer(s) or VRDO Remarketing Agent.	String{Min5,Max90} ex : Dealer MSRB Name
	AVTSCtrlNum	Unique identifier uses to tie transactions together in the case of modify or cancel.	String{Min16,Max16} ex : 9A842DA63EEF56EF
Instrument	CUSIP9	CUSIP Number for the ARS or VRDO	String{Min9,Max9} ex : 123456AB1
	Instrument Type	Indication of whether the security is an ARS or VRDO.	Enumerated Value: • A - ARS • V - VRDO

XML Container	Data Tag	Definition	Data Specification
Rate Information	Interest Rate Reset Date Time	ARS - Date time that the ARS auction occurred. All times are Eastern Time (ET) and in military format. VRDO - Date time that the VRDO interest rate reset was determined. All times are Eastern Time (ET) and in military format.	Date – yyyy-mm-dd ex: 2009-02-04 Time – hh24:mi:ss ex: 14:00:00
	Interest Rate Period	Number of calendar days that the interest rate produced is applicable.	Integer{Min0,Max999} ex:10
	Interest Rate Posting Date Time	ARS (only) - Date Time that the ARS auction results were communicated to ARS Program Dealers. All times are Eastern Time and in military format.	Date – yyyy-mm-dd ex: 2009-02-04 Time – hh24:mi:ss ex: 14:00:00
	Interest Rate	Interest rate, in percent.	Fixed Decimal (in percent) – nn.nnn
	Min Denomination	Minimum allowable transaction size, in par amount.	Numeric{Min0,Max9} ex: 25000
	Rate Type	ARS - Indication of whether the interest rate submitted represents a maximum rate (M), all hold rate (H), or an interest rate set by the auction process (A) VRDO - Indication of whether the interest rate submitted represents a maximum rate (M), a rate that was set by a formula (F), or a rate that was set by the VRDO Remarketing Agent (R)	Enumerated Value: ARS: • M – Max Rate • H – All Hold Rate • A – Set by Auction VRDO: • M – Max Rate • F – Set by Formula • R – Set by Agent
	Par Amount Auctioned	ARS (only) - Par amount auctioned not including hold orders effective at any interest rate. The par amount auctioned is commonly referred to in results of an auction communicated to Program Dealers by Auction Agents as the “accepted sells” or the “executed sells.”	Decimal{Min0,Max10} ex: 10000000.000
Min Rate	ARS - Minimum interest rate, in percent, applicable at the time of the auction or if such minimum interest rate is not able to be calculated, an indication that such rate is not calculable (NC). VRDO - Minimum interest rate, in percent, applicable at the time of the interest rate or if such minimum interest rate is not able to be calculated, an indication that such rate is not calculable (NC).	Fixed Decimal (in percent) – nn.nnn (or “NC” if not calculable)	

XML Container	Data Tag	Definition	Data Specification
	Max Rate	ARS - Maximum interest rate, in percent, applicable at the time of the auction or if such maximum interest rate is not able to be calculated, an indication that such rate is not calculable (NC). VRDO - Maximum interest rate, in percent, applicable at the time of the interest rate reset or if such maximum interest rate is not able to be calculated, an indication that such rate is not calculable (NC).	Fixed Decimal (in percent) – nn.nnn (or “NC” if not calculable)
	Par Amount Remarketed	VRDO (only) - Par amount of the VRDO held by a party other than the VRDO Remarketing Agent. (This data element is reserved for future use.)	Decimal{Min0,Max10} ex: 10000000.000
	Notification Period	VRDO (only) - Number of calendar days that may lapse between a holder of a VRDO tendering its security and a liquidity provider purchasing the tendered security in the event that the Remarketing Agent is unable to remarket the tendered security.	Integer{Min0,Max999} ex:10
	Liquidity Facility Type	VRDO (only) - For each liquidity facility applicable to the VRDO, an indication of whether each is a standby bond purchase agreement (P) or letter of credit (L).	Enumerated Value: • P – Standby Bond Purchase Agreement • L – Letter of Credit
	Liquidity Facility Expire Date	VRDO (only) - The expiration date of each liquidity facility applicable to the VRDO.	Date – yyyy-mm-dd ex: 2009-02-04

FIGURE 5**SAMPLE XML MESSAGES**

```

<?xml version="1.0"?>
<SubscriberResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="http://www.msrb.org/avts/subscriber_response">
  <ResponseMessageHeader>
    <ResponseMessageID xmlns="http://www.msrb.org/avts/common">0001909931</ResponseMessageID>
    <ResponseMessageTimeStamp xmlns="http://www.msrb.org/avts/common">
      <Date>2010-04-27</Date>
      <Time>14:00:03</Time>
    </ResponseMessageTimeStamp>
  </ResponseMessageHeader>
  <SubscriberMessage>
    <SubscriberRequestDetails>
      <UserID xmlns="http://www.msrb.org/avts/common">abcd</UserID>
      <SubscriberMessageTimeStamp xmlns="http://www.msrb.org/avts/common">
        <Date>2010-04-27</Date>
        <Time>02:00:00</Time>
      </SubscriberMessageTimeStamp>
      <InformationType xmlns="http://www.msrb.org/avts/common">ResetRate/Liquidity</InformationType>
      <Query>
        <FromSeqNum>0000000000000001</FromSeqNum>
      </Query>
    </SubscriberRequestDetails>
    <QueryResults>
      <QueryStatus>
        <ResultCode xmlns="http://www.msrb.org/avts/common">S001</ResultCode>
        <ResultMessage xmlns="http://www.msrb.org/avts/common">100 Transaction(s) Included</ResultMessage>
      </QueryStatus>
      <ResultSets>

```

ARS ...

```

  <ResultSet SeqNum="0000000000000001">

```

```
<Result>
  <ResultCode xmlns="http://www.msrb.org/avts/common">S001</ResultCode>
  <ResultMessage xmlns="http://www.msrb.org/avts/common">Success: Transaction retrieved</ResultMessage>
</Result>
<Transaction AVTSCtrlNum="9A842DA63EEF56EF">
  <TransactionType>I</TransactionType>
  <Instrument>
    <CUSIP9 xmlns="http://www.msrb.org/avts/common">059231QQ6</CUSIP9>
    <InstrumentType xmlns="http://www.msrb.org/avts/common">A</InstrumentType>
  </Instrument>
  <PublishDateTime>
    <Date xmlns="http://www.msrb.org/avts/common">2009-01-30</Date>
    <Time xmlns="http://www.msrb.org/avts/common">14:22:53</Time>
  </PublishDateTime>
  <DealerNames>
    <DealerMSRBName xmlns="http://www.msrb.org/avts/common">Morgan Stanley & amp; Co. Incorporated</DealerMSRBName>
  </DealerNames>
  <RateInformation xmlns="http://www.msrb.org/avts/submitter">
    <InterestRateResetDateTime>
      <Date xmlns="http://www.msrb.org/avts/common">2009-01-30</Date>
      <Time xmlns="http://www.msrb.org/avts/common">13:05:21</Time>
    </InterestRateResetDateTime>
    <InterestRatePeriod>7</InterestRatePeriod>
    <InterestRatePostingDateTime>
      <Date xmlns="http://www.msrb.org/avts/common">2009-01-30</Date>
      <Time xmlns="http://www.msrb.org/avts/common">13:10:01</Time>
    </InterestRatePostingDateTime>
    <InterestRate>0.350</InterestRate>
    <MinDenomination>25000</MinDenomination>
    <RateType>M</RateType>
    <ParAmountAuctioned>41925000.000</ParAmountAuctioned>
    <MinRate>0.090</MinRate>
    <MaxRate>0.350</MaxRate>
  </RateInformation>
</Transaction>
</ResultSet>
```


VRDO ...

```
<ResultSet SeqNum="000000000090003">
  <Result>
    <ns2:ResultCode>S001</ns2:ResultCode>
    <ns2:ResultMessage>Success: Transaction retrieved</ns2:ResultMessage>
  </Result>
  <Transaction AVTSCtrlNum="16A1F522E83D3F83">
    <TransactionType>I</TransactionType>
    <Instrument>
      <ns2:CUSIP9>462460E51</ns2:CUSIP9>
      <ns2:InstrumentType>V</ns2:InstrumentType>
    </Instrument>
    <PublishDateTime>
      <ns2:Date>2009-04-20</ns2:Date>
      <ns2:Time>10:27:25</ns2:Time>
    </PublishDateTime>
    <DealerNames>
      <ns2:DealerMSRBName>Piper Jaffray & amp; Co.</ns2:DealerMSRBName>
    </DealerNames>
    <ns3:RateInformation>
      <ns3:InterestRateResetDateTime>
        <ns2:Date>2009-04-20</ns2:Date>
        <ns2:Time>10:24:40</ns2:Time>
      </ns3:InterestRateResetDateTime>
      <ns3:InterestRatePeriod>1</ns3:InterestRatePeriod>
      <ns3:NotificationPeriod>1</ns3:NotificationPeriod>
      <ns3:InterestRate>0.350</ns3:InterestRate>
      <ns3:MinDenomination>100000</ns3:MinDenomination>
      <ns3:RateType>R</ns3:RateType>
      <ns3:ParAmountRemarketed>0.000</ns3:ParAmountRemarketed>
      <ns3:MinRate>0.000</ns3:MinRate>
      <ns3:MaxRate>10.000</ns3:MaxRate>
      <ns3:LiquidityFacilities>
        <ns3:LiquidityFacility>
          <ns3:LiquidityFacilityType>L</ns3:LiquidityFacilityType>
        </ns3:LiquidityFacility>
      </ns3:LiquidityFacilities>
    </ns3:RateInformation>
  </Transaction>
</ResultSet>
```

```
<ns3:LiquidityFacilityExpireDate>2011-06-20</ns3:LiquidityFacilityExpireDate>
  </ns3:LiquidityFacility>
</ns3:LiquidityFacilities>
  </ns3:RateInformation>
</Transaction>
</ResultSet>
</ResultSets>
</QueryResults>
</SubscriberMessage>
</SubscriberResponse>
```