

SMS Broker System
Software Integration

Our system uses
WCF
(Windows Communication Foundation)
&
.NET

Importer Security Filing classes and interfaces.

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1. Special Notes.

1. Shipment. As it was mentioned in *01. Getting Started With SMS API.pdf*, *6. Data Validation*, the “complete requirements” validation is used only on a queue process stage and hence it depends only on a type of a Customs application we finally send to Customs. One and the same document type (Document class) can have different collections stuff when it takes a part in different subsystems. On our case such document is [Shipment](#) class. Its objects are included here as a collection to Importer Security Filing document. In contrast to its usage in [CustomsEntry](#) class, here (in [ImporterSecurityFiling](#) class) [Shipment](#) class object contains only Loads collection of objects ([ShipmentLoad](#)).

2. Importer Security Filing.

Importer Security Filing document represents an info that is necessary for ISF-5 or ISF-10 CBP Forms submission.

Class: [\[DataContract\]](#)

SMS.Broker.DataContracts.Documents.[ImporterSecurityFiling](#) : [EntityDocument](#)
Header data of Importer Security Filing document.

Properties:

Attributes	Name	Type	Description
[DataMember] [StringLength(2)]	ActionReasonCode	string	Action Reason Code.
[StringLength(2)] [DataMember]	BondActivityCode	string	Bond Activity Code Has possible values.
[DataMember]	BondHolder	Contact	Bond Holder [1]
[DataMember]	BondHolder_Id	long?	Bond Holder Id

[StringLength(200)] [DataMember]	BondReferenceNumber	string	Bond Reference Number
[StringLength(1)] [DataMember]	BondType	string	Bond Type Has possible values.
[DataMember]	Carrier	Carrier	Required. Carrier record
[DataMember]	Carrier_Id	long?	Required. Carrier Id of Carrier record
[StringLength(20)] [DataMember]	ClientRef	string	Client reference
[DataMember]	CommercialEntities	List<ImporterSecurityFilingCommercialEntity>	Commercial Entities
[DataMember]	Commodities	List<ImporterSecurityFilingCommodity>	Commodities
[DecimalPrecisionAttribute(11,0)] [DataMember]	EstimatedQuantity	decimal?	Estimated Quantity
[StringLength(3)] [DataMember]	EstimatedQuantityUnitOfMeasure	string	Estimated Quantity Unit Of Measure
[DecimalPrecisionAttribute(11,0)] [DataMember]	EstimatedValue	decimal?	Estimated Value
[DecimalPrecisionAttribute(11,0)] [DataMember]	EstimatedWeight	decimal?	Estimated Weight
[StringLength(1)] [DataMember]	EstimatedWeightQualifiers	string	Has possible values.
[Column(TypeName = "date")] [DataMember]	ExpiredDate	DateTime?	Expired Date
[DataMember]	Importer	Contact	Required. Contact of Importer. Can be requested using Include.
[DataMember]	Importer_Id	long	Required. Contact Id of Importer record
[DataMember]	LastStatuses	List<EntityLastStatus>	Last status collection.
[DataMember]	PlaceOfDelivery	UNECELoCode	UNLoc (United Nations Location) code used for identification of place where delivery occurs in the foreign country beyond the port of unloading
[DataMember]	PlaceOfDelivery_Id	long?	Foreign Place of Delivery.
[DataMember]	PlaceOfUnlading	UNECELoCode	UNLoc (United Nations Location) code of foreign place used to report where cargo is unladen after export from the US
[DataMember]	PlaceOfUnlading_Id	long?	Foreign Place of Unlading Id.
[DataMember]	PortOfDelivery	CustomsPort	Schedule K code used for port identification where delivery occurs in the foreign country beyond the port of unloading

[DataMember]	PortOfDelivery_Id	long?	Foreign Port of Delivery Id.
[DataMember]	PortOfUnlading	CustomsPort	Schedule K code of foreign seaports used to report where cargo is unladen after export from the US.
[DataMember]	PortOfUnlading_Id	long?	Foreign Unlading Port Id
[DataMember]	Shipments	List<Shipment>	Shipments included to ISF [3].
[IgnoreDataMember] [NotMapped]	ShipmentsClientRef	string	Client reference of Shipment class document.
[StringLength(2)] [DataMember]	ShipmentSubType	string	Shipment Sub Type Has possible values.
[StringLength(2)] [DataMember]	ShipmentType	string	Shipment Type Has possible values.
[DataMember]	Statuses	List<EntityStatus>	Obsolete. Use LastStatuses instead. ISF Statuses
[StringLength(1)] [DataMember]	SubmissionType	string	Submission Type Has possible values.
[StringLength(3)] [DataMember]	SuretyCode	string	Surety Code
[DataMember] [Column(TypeName = "text")]	Tag	string	For future use.
[DataMember]	TransactionNumber	string	Transaction number
[StringLength(2)] [DataMember]	TransportationMode	string	Required. Transportation mode code. Has possible values.

[1] BondHolder is a [Contact](#) object (See *Contact classes and interfaces. Part 1.pdf*). While generating ABI application (SF) Bond Holder uses one of the following [Contact](#) object properties:

IRSNumber (Internal Revenue Service (IRS) Number)
 CBPNumber (CBP Assigned Number)
 SocialSecurityNumber (Social Security Number)

First of all system tries to use IRS Number. If IRS Number is absent system tries to use CBP Number instead of IRS Number and if CBP Number is also empty the system uses Social Security Number for Bond Holder property.

Interface: [\[ServiceContract\]](#)
 SMS.Broker.ServiceContracts.Documents.IImporterSecurityFilingManager :
[IEntityManagerDocument<ImporterSecurityFiling>](#) [1]

Methods:

Attributes	Name	Type	Description
[OperationContract] [FaultContract(typeof(ActionFault))]	CheckManufacturerSupplierCodes(long id)	void	Checks if we sent all manufacturer codes to customs. If some codes are new then it automatically sends "Add Manufacturer Name & Address –

			request" \$I – application. Where Id is ISF Id
[OperationContract]	GetFullNumber(long number)	string	Returns full ISF number (adds filer code and check digit)
[OperationContract] [FaultContract(typeof(ActionFault))]	GetReport_ISFStatusSheet(long Id, Broker.DataContracts.Reports.Report OutputFormat output)	byte[]	Generates a report by ISF Id.
[OperationContract]	PutToQUEUEOneWay(long id, ImporterSecurityFiling.ActionQUE action);	void	[2]
[OperationContract]	void SetUserData(long id, string data)	void	Set user data by ISF id (see ISF UserData property.)

[1] - The features of `IImporterSecurityFilingManager` those are different from other Operation Contract inherited classes.

a) New(long? SourceId) method returns a new `ImporterSecurityFiling` class object. Its number will be assigned by "ImporterSecurityFiling" sequence. By default a new ISF object contains:
SubmissionType = "1", ShipmentType = "01", EstimatedQuantityUnitOfMeasure = "PCS",
EstimatedWeightQualifiers = "K", BondType = "8", BondActivityCode = "01", TransportationMode = "11"

b) For Save1(`ImporterSecurityFiling` entity) method Importer_Id, TransportationMode and Carrier_Id properties are required. By this method on the server side the `ImporterSecurityFiling` object's record will be saved with the records corresponded to the follow collections:

ImporterSecurityFiling.Commodities,
ImporterSecurityFiling.CommercialEntities,
ImporterSecurityFiling.Shipments,
ImporterSecurityFiling.Shipments.Loads.

As it was mentioned earlier "independent" collections have its own managers and usually use their Save() method. Shipments is an independent collection and hence has its own Save() method too. But there is some exclusion on ISF case – Shipments collection is saved directly by Importer Security Filing manager.

If ISF object was created on client side by constructor new ISF() instead of New(long? SourceId) method and its Number property is zero then on server side Number property will be set to the next number of "ImporterSecurityFiling" sequence.

c) ValidateTreeById(long Id, string action)

action:

"QUE SF" - on ISF case ValidateTreeById(long Id, string action) method makes the same data validation as it is used before to send ABI application (SF) to Customs. If validation process was not successful `EntryValidationFault` will be thrown.

d) The follow statuses are used for ISF document.

Entity status type:

`EntityStatusType.ABIAppQUE`

Entity status values:

`EntityStatusValue.ABIAppPutToQUE`
`EntityStatusValue.ABIAppSent`
`EntityStatusValue.ABIAppAccepted`
`EntityStatusValue.ABIAppRejected`
`EntityStatusValue.ABIAppPutToQUEError`
`EntityStatusValue.ABIAppIncoming`
`EntityStatusValue.ABIAppRemoveFromQUE`

Entity status type:

`EntityStatusType.ABIAppCustoms`

Entity status values:

`EntityStatusValue.ABIAppCustomsAccepted`

`EntityStatusValue.ABIAppCustomsNoBillOnFile`

`EntityStatusValue.ABIAppCustomsBillOnFile`

`EntityStatusValue.ABIAppCustomsDeletedInCustoms`

`EntityStatusValue.ABIAppCustomsExpired`

On the table below you can see all changes in ISF document last status (Status Type and Status Value properties) those undergo during data exchange with Customs. The actions which suggest some workflow problem are marked in red.

Action	Status Type	Status Value
SF Put to queue→	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppPutToQUE</code>
SF ←Put to queue error	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppPutToQUEError</code>
SF ←Remove (if necessary)	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppRemoveFromQUE</code>
SF Transmit→	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppSent</code>
SN ←Get file	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppIncoming</code>
SN ←Get with error	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppIncomingError</code>
SN ←Rejected	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppRejected</code>
SN ←Accepted	<code>EntityStatusType.ABIAppCustoms</code>	<code>EntityStatusValue.ABIAppCustomsAccepted</code>
SA ←Deleted (Canceled) by Customs by some reason	<code>EntityStatusType.ABIAppCustoms</code>	<code>EntityStatusValue.ABIAppCustomsDeletedInCustoms</code>
SA ←Get file	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppIncoming</code>
SA ←Get file with error	<code>EntityStatusType.ABIAppQUE</code>	<code>EntityStatusValue.ABIAppIncomingError</code>
SA ←No bill	<code>EntityStatusType.ABIAppCustoms</code>	<code>EntityStatusValue.ABIAppCustomsNoBillOnFile</code>
SA ←Bill on file	<code>EntityStatusType.ABIAppCustoms</code>	<code>EntityStatusValue.ABIAppCustomsBillOnFile</code>
SA ←Expired	<code>EntityStatusType.ABIAppCustoms</code>	<code>EntityStatusValue.ABIAppCustomsExpired</code>

SF - Importer Security Filing Customs incoming (our outgoing) file.

SN - Importer Security Filing Customs outgoing (our incoming) file.

SA - Importer Security Filing Status Notification Customs outgoing (our incoming) file.

Initially the response from Customs should come to our SF file sent. It comes on SN file. If our file is accepted then ISF document gets a transaction number. After that Customs periodically checks the information about bills related to this ISF and sends ISF Status Notification (SA) files. There is no a need to send a request to receive these files.

The meaning of SA files is follow: Customs checks ISF info against information about the freight on Accounting Manifest System (AMS). If the info about the freight already received by AMS from a carrier then ISF filer gets SA file with "BILL ON FILE" message. Otherwise, ISF filer gets SA file with "NO BILL MATCH (NOT ON FILE)" message. On this case Customs continues to match ISF filer's info against AMS info and if the last one appears sends SA file with "BILL ON FILE" message. If carrier's info didn't come to AMS during a month Customs sends SA file with "EXPIRED" message.

[2] – Method can be used instead of more general method `PutToQueueOneWay(string AppId, List<Parameter> parameters)` described in `SMS.Broker.ServiceContracts.ISmsABIManager`.

Since it is used for Importer Security Filing only it has more simple set of parameters.

```
PutToQUEOneWay(long id, ImporterSecurityFiling.ActionQUE action)
```

Parameters:

id - ISF document Id.

action -

```
ImporterSecurityFiling.ActionQUE.Add,  
ImporterSecurityFiling.ActionQUE.Replace,  
ImporterSecurityFiling.ActionQUE.Delete.
```

For example:

```
var mgr =  
ClientContext.ServicesFactory.GetManager<SMS.Broker.ServiceContracts.Documents.IImporterSecurityFilingManager>();  
mgr.PutToQUEOneWay(5L,  
Broker.DataContracts.Documents.ImporterSecurityFiling.ActionQUE.Add); //Send to Customs  
//new ISF with ADD action.
```

2.1 Commodity.

Class: [DataContract]

SMS.Broker.DataContracts.Documents.ImporterSecurityFilingCommodity : EntityChild
Harmonized Tariff Schedule commodity info.

Properties:

Attributes	Name	Type	Description
[StringLength(2)] [DataMember]	CountryOfOrigin	string	Country of origin. Has possible values.
[StringLength(10)] [DataMember]	HarmonizedTariffNumber	string	Harmonized Tariff Number
[DataMember]	ImporterSecurityFiling	ImporterSecurityFiling	The reference to Importer Security Filing object this commodity belongs to.
[DataMember]	ImporterSecurityFiling_Id	long	Importer Security Filing object Id.
[DataMember]	Manufacturer	Contact	Manufacturer.
[DataMember]	Manufacturer_Id	long?	Manufacturer id.

Methods:

Attributes	Name	Type	Description
	ToDetailString()	string	Returns detailed text representation. "Manufacturer: " + Manufacturer.Name + "Country of origin: " + CountryOfOrigin
	ToShortString()	string	Returns short text representation.

			Line.ToString() + ". " + HarmonizedTariffNumber
	ToString()	string	Returns text representation. "ISF commodity line:" + Line.ToString() + " hts:" + HarmonizedTariffNumber

2.2 Commercial Entity.

Class: [DataContract]

SMS.Broker.DataContracts.Documents.ImporterSecurityFilingCommercialEntity

: EntityChild

Commercial Entity info.

Properties:

Attributes	Name	Type	Description
[DataMember]	Contact	Contact	Contact data
[DataMember]	Contact_Id	long?	Contact Id if this Importer Security Filing belongs to contact else null
[DataMember [StringLength(3)]	EntityCode	string	Entity Code ("SE", "BY" "ST" etc.)
[DataMember]	ImporterSecurityFiling	ImporterSecurityFiling	Importer Security Filing record
[DataMember]	ImporterSecurityFiling_Id	long	Importer Security Filing record Id

Methods:

Attributes	Name	Type	Description
	ToDetailString()	string	Returns detailed text representation. It is the same as ToString().
	ToShortString()	string	Returns short text representation. Line.ToString() + ". " + Contact.Name
	ToString()	string	Returns text representation. "ISF entity line:" + Line.ToString() + ". " + Contact.Name

3. Shipment.

Detailed description of Shipment class you can find in *03. Customs entry classes and interfaces. Part 1.pdf*, *2. Shipment*. See also *"1. Special Notes", Shipment* of the current document.

3.1 Shipment Load.

Detailed description of Shipment class you can find in *03. Customs entry classes and interfaces. Part 1.pdf*, *2.2 Shipment Load*. See also *1. Special Notes, Shipment* of the current document.