Schema documentation for MIF300.xsd

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Namespace: "http://psi.hupo.org/mi/mif300"

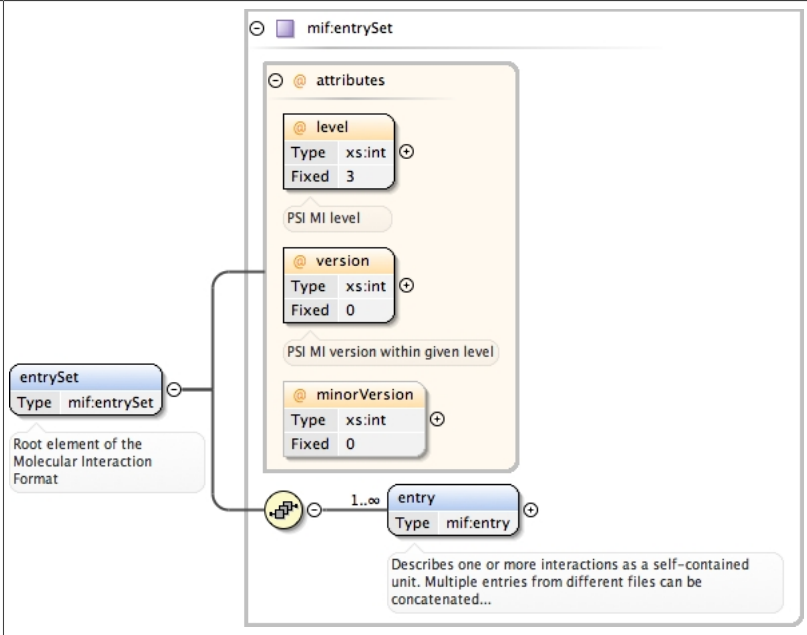
Schema(s)

Main schema `MIF300.xsd`

Namespace	http://psi.hupo.org/mi/mif300
Properties	attribute form default: `unqualified` element form default: `qualified`

Element(s)

Element `mif:entrySet`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Root element of the Molecular Interaction Format`
Diagram	
Type	mif:entrySet
Properties	content: `complex`
Model	mif:entry+
Children	mif:entry

Instance	`<mif:entrySet level="3" minorVersion="0" version="0" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:entry>{1,unbounded}</mif:entry>`
	`</mif:entrySet>`

Attributes

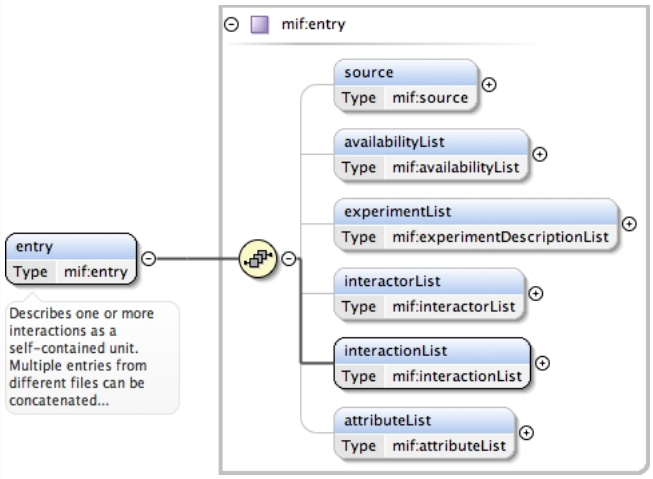
QName	Type	Fixed	Default	Use
level	xs:int	3		required
	`PSI MI level`			
minorVersion	xs:int	0		optional
version	xs:int	0		required
	`PSI MI version within given level`			

Source

```
<xs:element name="entrySet" type="mif:entrySet">
  <xs:annotation>
    <xs:documentation>Root element of the Molecular Interaction Format</xs:documentation>
  </xs:annotation>
</xs:element>
```

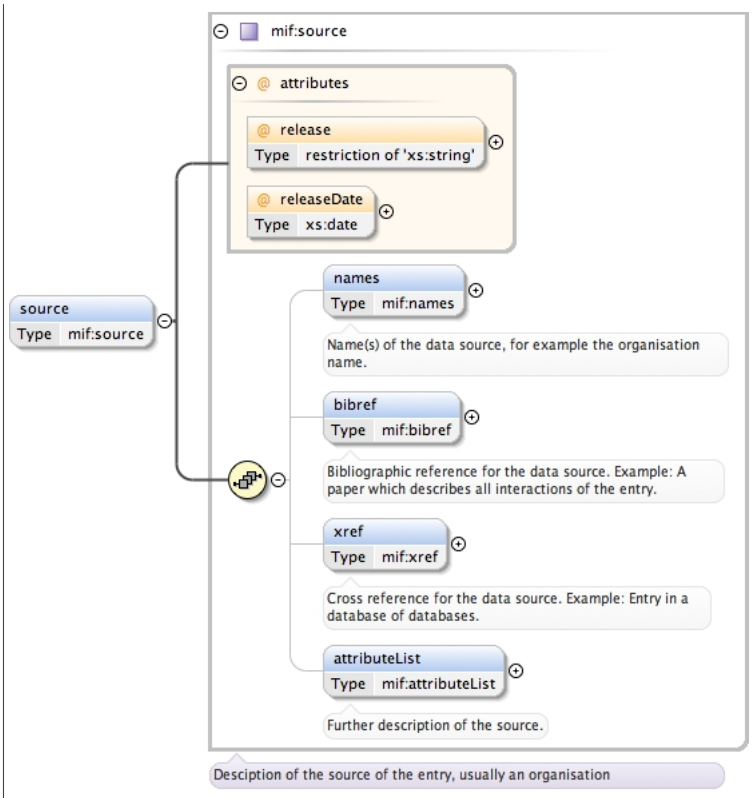
Element `mif:entrySet / mif:entry`

Namespace	http://psi.hupo.org/mi/mif300

Annotations	Describes one or more interactions as a self-contained unit. Multiple entries from different files can be concatenated into a single entrySet.
Diagram	
Type	mif:entry
Properties	content: complex maxOccurs: unbounded
Model	mif:source{0,1} , mif:availabilityList{0,1} , mif:experimentList{0,1} , mif:interactorList{0,1} , mif:interactionList , mif:attributeList{0,1}
Children	mif:attributeList, mif:availabilityList, mif:experimentList, mif:interactionList, mif:interactorList, mif:source
Instance	<mif:entry xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:source release="" releaseDate="">{0,1}</mif:source> <mif:availabilityList>{0,1}</mif:availabilityList> <mif:experimentList>{0,1}</mif:experimentList> <mif:interactorList>{0,1}</mif:interactorList> <mif:interactionList>{1,1}</mif:interactionList> <mif:attributeList>{0,1}</mif:attributeList> </mif:entry>
Source	<xs:element name="entry" maxOccurs="unbounded" type="mif:entry"> <xs:annotation> <xs:documentation>Describes one or more interactions as a self-contained unit. Multiple entries from different files can be concatenated into a single entrySet.</xs:documentation> </xs:annotation> </xs:element>

Element mif:entry / mif:source

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:source
Properties	content: complex minOccurs: 0
Model	mif:names{0,1} , mif:bibref{0,1} , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bibref, mif:names, mif:xref

Instance	`<mif:source release="" releaseDate="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{0,1}</mif:names>`
	`  <mif:bibref>{0,1}</mif:bibref>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:source>`

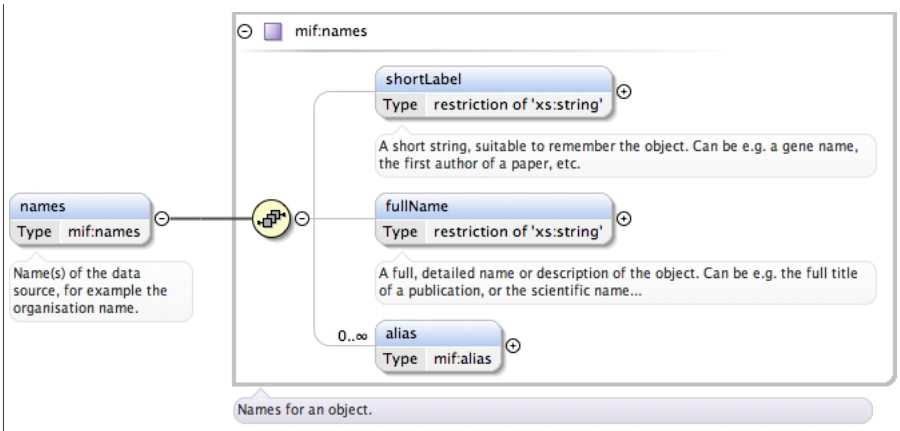
Attributes

QName	Type	Fixed	Default	Use
release	restriction of xs:string			optional
releaseDate	xs:date			optional

Source	`<xs:element name="source" type="mif:source" minOccurs="0"/>`

Element `mif:source / mif:names`

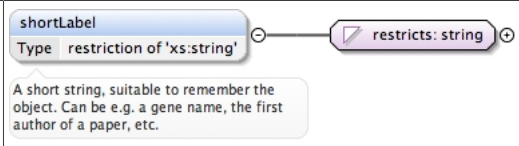
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Name(s) of the data source, for example the organisation name.

Diagram	
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

Source	`<xs:element name="names" type="mif:names" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Name(s) of the data source, for example the organisation name.</`
	`xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

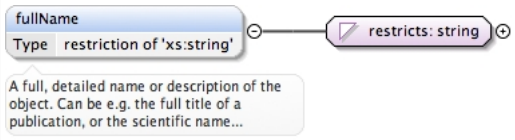
Element mif:names / mif:shortLabel

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A short string, suitable to remember the object. Can be e.g. a gene name, the first author of a paper, etc.
Diagram	
Type	restriction of xs:string
Properties	content: simple minOccurs: 0
Facets	minLength 1

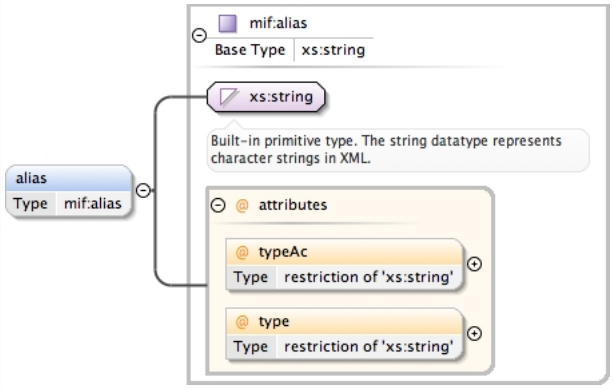
Source	`<xs:element name="shortLabel" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>A short string, suitable to remember the object. Can be e.g. a gene name, the`
	` first author of a paper, etc.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:simpleType>`
	`  <xs:restriction base="xs:string">`
	`  <xs:minLength value="1"/>`
	`  </xs:restriction>`
	`  </xs:simpleType>`
	`</xs:element>`

Element mif:names / mif:fullName

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A full, detailed name or description of the object. Can be e.g. the full title of a publication, or the scientific name of a species.

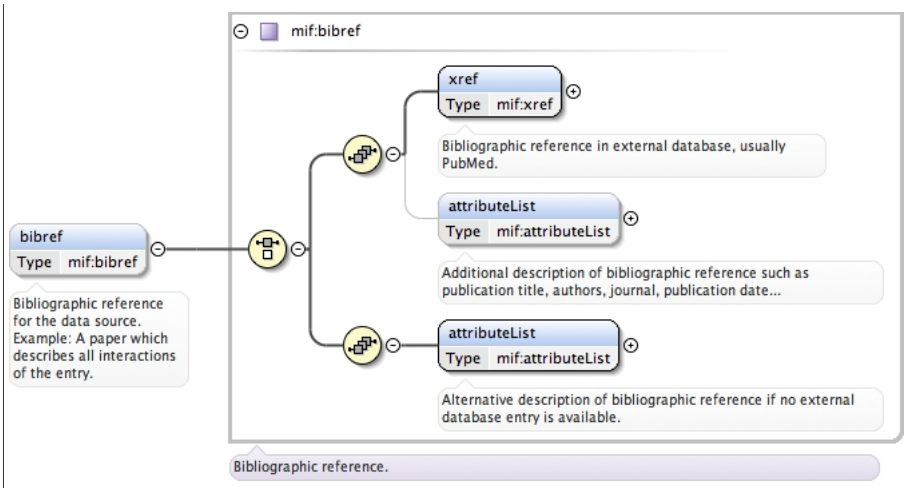
Diagram	
Type	restriction of xs:string
Properties	content: simple minOccurs: 0
Facets	minLength 1
Source	<xs:element name="fullName" minOccurs="0"> <xs:annotation> <xs:documentation>A full, detailed name or description of the object. Can be e.g. the full title of a publication, or the scientific name of a species.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:element>

Element mif:names / mif:alias

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:alias
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **type** / restriction of xs:string / / / optional **typeAc** / restriction of xs:string / / / optional
Source	<xs:element name="alias" type="mif:alias" minOccurs="0" maxOccurs="unbounded"/>

Element mif:source / mif:bibref

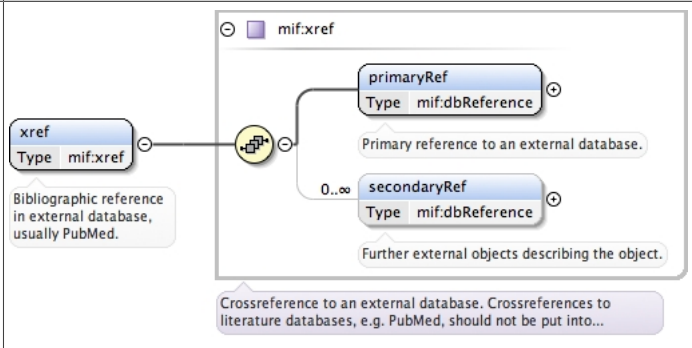
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Bibliographic reference for the data source. Example: A paper which describes all interactions of the entry.

Diagram	
Type	mif:bibref
Properties	content: complex minOccurs: 0
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref

Instance	`<mif:bibref xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:xref>{1,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`  <mif:attributeList>{1,1}</mif:attributeList>`
	`</mif:bibref>`

Source	`<xs:element name="bibref" type="mif:bibref" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Bibliographic reference for the data source. Example: A paper which describes all interactions of the entry.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

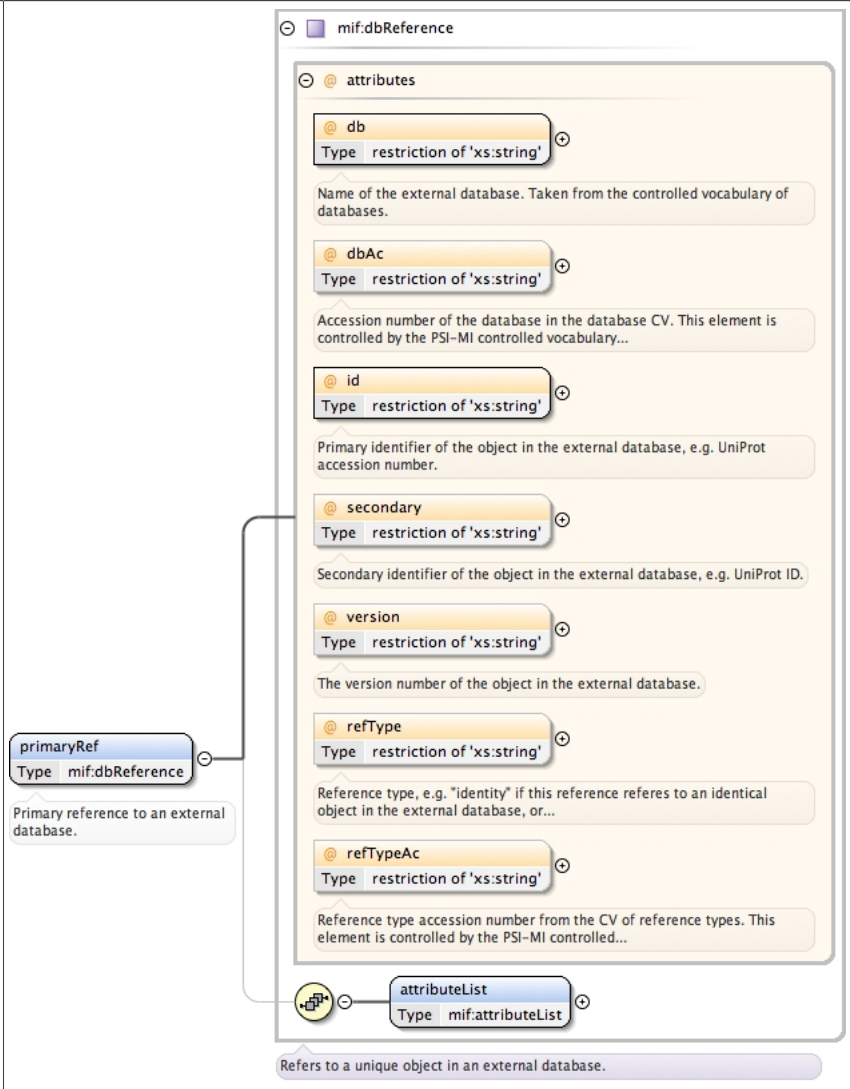
Element `mif:bibref / mif:xref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Bibliographic reference in external database, usually PubMed.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 1 maxOccurs: 1
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef

Instance	`<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef>`
	`  <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef>`
	`</mif:xref>`

Source	<xs:element name="xref" type="mif:xref" minOccurs="1" maxOccurs="1"> <xs:annotation> <xs:documentation>Bibliographic reference in external database, usually PubMed.</ xs:documentation> </xs:annotation> </xs:element>

Element `mif:xref / mif:primaryRef`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Primary reference to an external database.
Diagram	
Type	mif:dbReference
Properties	content: complex
Model	mif:attributeList
Children	mif:attributeList
Instance	<mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="" xmlns:mif="http:// psi.hupo.org/mi/mif300"> <mif:attributeList>{1,1}</mif:attributeList> </mif:primaryRef>

Attributes

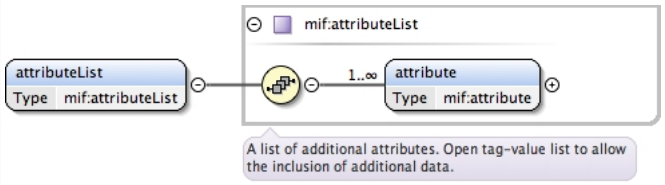
QName	Type	Fixed	Default	Use
db	restriction of xs:string			required
	Name of the external database. Taken from the controlled vocabulary of databases.			
dbAc	restriction of xs:string			optional

	QName	Type	Fixed	Default	Use
		Accession number of the database in the database CV. This element is controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.			
	id	restriction of xs:string			required
		Primary identifier of the object in the external database, e.g. UniProt accession number.			
	refType	restriction of xs:string			optional
		Reference type, e.g. "identity" if this reference referes to an identical object in the external database, or "see-also" for additional information. Controlled by CV.			
	refTypeAc	restriction of xs:string			optional
		Reference type accession number from the CV of reference types. This element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.			
	secondary	restriction of xs:string			optional
		Secondary identifier of the object in the external database, e.g. UniProt ID.			
	version	restriction of xs:string			optional
		The version number of the object in the external database.			

Source

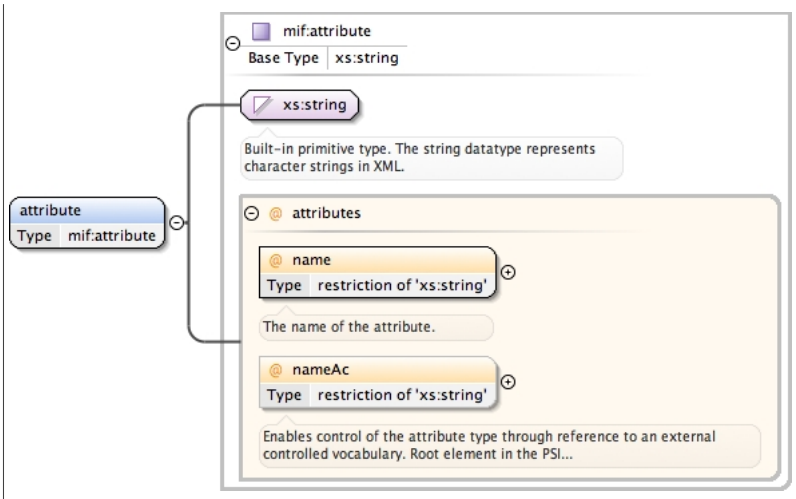
```
<xs:element name="primaryRef" type="mif:dbReference">
  <xs:annotation>
    <xs:documentation>Primary reference to an external database.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:dbReference / mif:attributeList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:attributeList
Properties	content: complex
Model	mif:attribute+
Children	mif:attribute
Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">   <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>`
Source	`<xs:element name="attributeList" type="mif:attributeList"/>`

Element `mif:attributeList / mif:attribute`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:attribute
Properties	content: complex maxOccurs: unbounded

Attributes

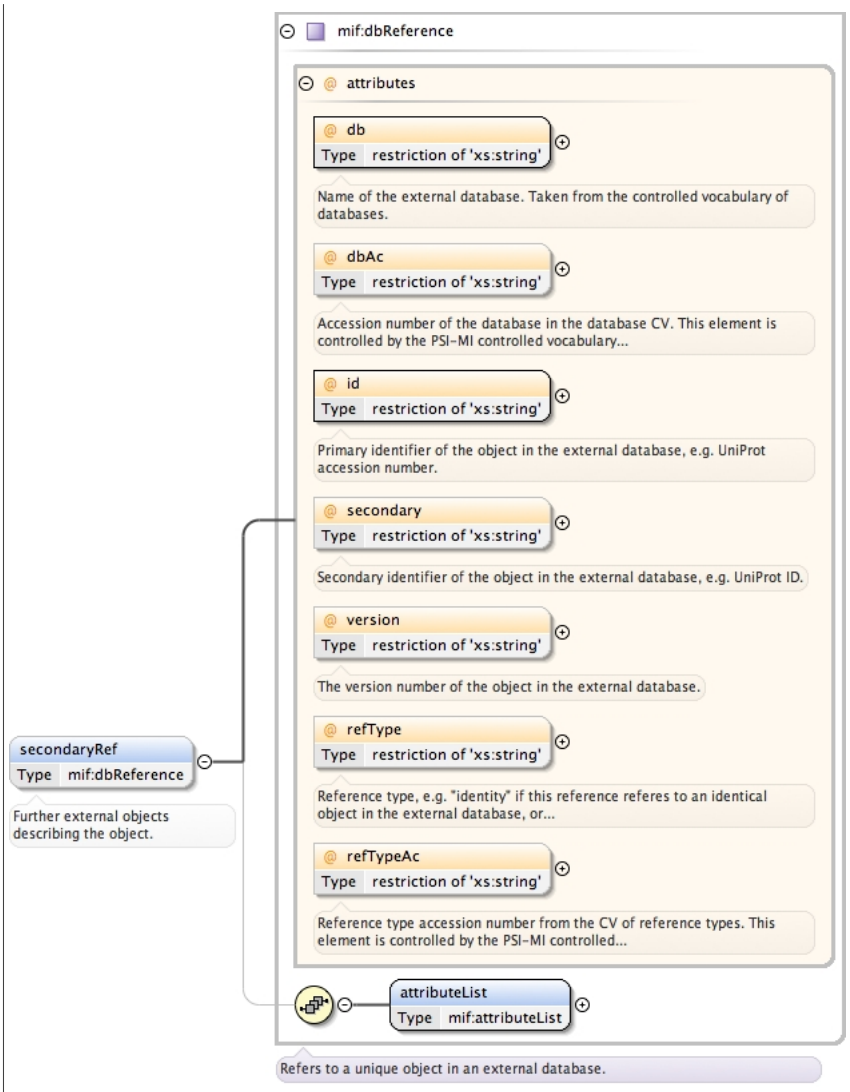
QName	Type	Fixed	Default	Use
name	restriction of xs:string			required
	The name of the attribute.			
nameAc	restriction of xs:string			optional
	Enables control of the attribute type through reference to an external controlled vocabulary. Root element in the PSI MI CV is MI:0590.			

Source

```
<xs:element name="attribute" type="mif:attribute" maxOccurs="unbounded"/>
```

Element `mif:xref / mif:secondaryRef`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Further external objects describing the object.

Diagram	
Type	mif:dbReference
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	mif:attributeList
Children	mif:attributeList

Instance	`<mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:attributeList>{1,1}</mif:attributeList>`
	`</mif:secondaryRef>`

Attributes

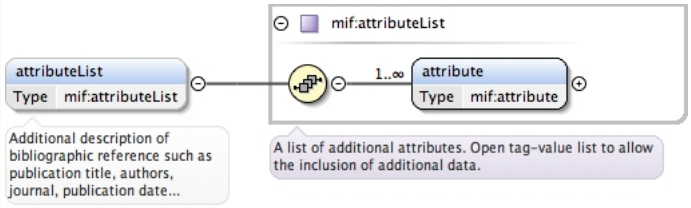
QName	Type	Fixed	Default	Use
db	restriction of xs:string			required
	Name of the external database. Taken from the controlled vocabulary of databases.			
dbAc	restriction of xs:string			optional
	Accession number of the database in the database CV. This element is controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.			
id	restriction of xs:string			required
	Primary identifier of the object in the external database, e.g. UniProt accession number.			
refType	restriction of xs:string			optional

	QName	Type	Fixed	Default	Use
		Reference type, e.g. "identity" if this reference referes to an identical object in the external database, or "see-also" for additional information. Controlled by CV.			
	refTypeAc	restriction of xs:string			optional
		Reference type accession number from the CV of reference types. This element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.			
	secondary	restriction of xs:string			optional
		Secondary identifier of the object in the external database, e.g. UniProt ID.			
	version	restriction of xs:string			optional
		The version number of the object in the external database.			

Source

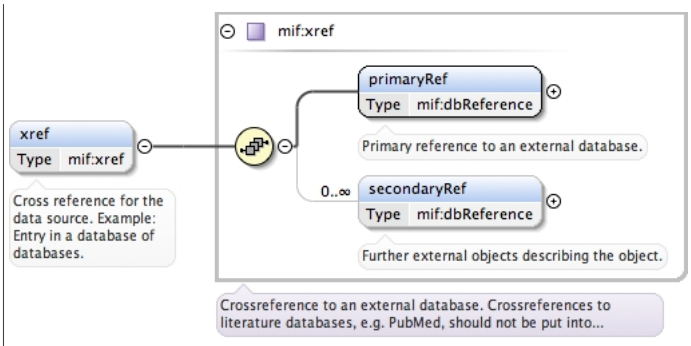
```
<xs:element name="secondaryRef" type="mif:dbReference" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Further external objects describing the object.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element mif:bibref / mif:attributeList

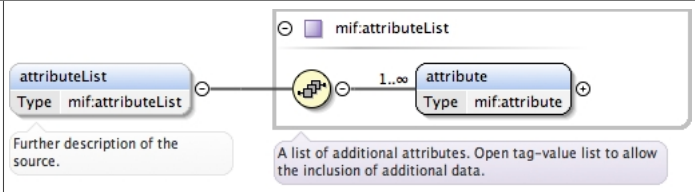
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Additional description of bibliographic reference such as publication title, authors, journal, publication date...
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:attribute+
Children	mif:attribute
Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">   <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>`
Source	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0" maxOccurs="1">   <xs:annotation>   <xs:documentation>Additional description of bibliographic reference such as publication title, authors, journal, publication date...</xs:documentation>   </xs:annotation> </xs:element>`

Element mif:source / mif:xref

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Cross reference for the data source. Example: Entry in a database of databases.

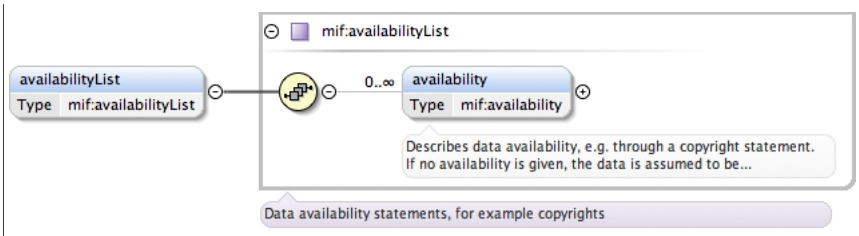
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	`<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</ mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</ mif:secondaryRef> </mif:xref>`
Source	`<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Cross reference for the data source. Example: Entry in a database of databases.</xs:documentation> </xs:annotation> </xs:element>`

Element `mif:source / mif:attributeList`

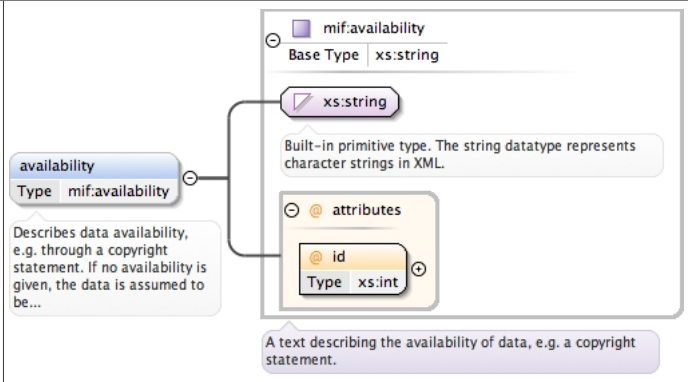
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Further description of the source.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>`
Source	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>Further description of the source.</xs:documentation> </xs:annotation> </xs:element>`

Element `mif:entry / mif:availabilityList`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:availabilityList
Properties	content: complex minOccurs: 0
Model	mif:availability*
Children	mif:availability
Instance	`<mif:availabilityList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:availability id="">{0,unbounded}</mif:availability> </mif:availabilityList>`
Source	`<xs:element name="availabilityList" type="mif:availabilityList" minOccurs="0"/>`

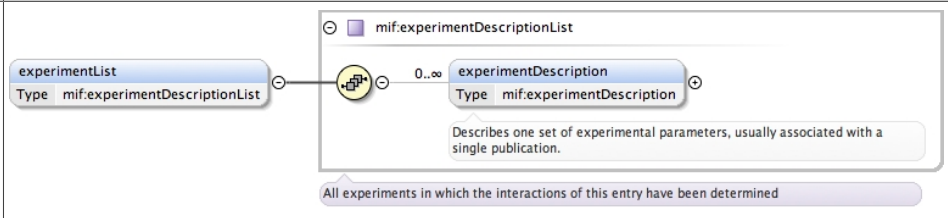
Element `mif:availabilityList / mif:availability`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes data availability, e.g. through a copyright statement. If no availability is given, the data is assumed to be freely available.
Diagram	
Type	mif:availability
Properties	content: complex minOccurs: 0 maxOccurs: unbounded

Attributes	QName	Type	Fixed	Default	Use
	id	xs:int			required

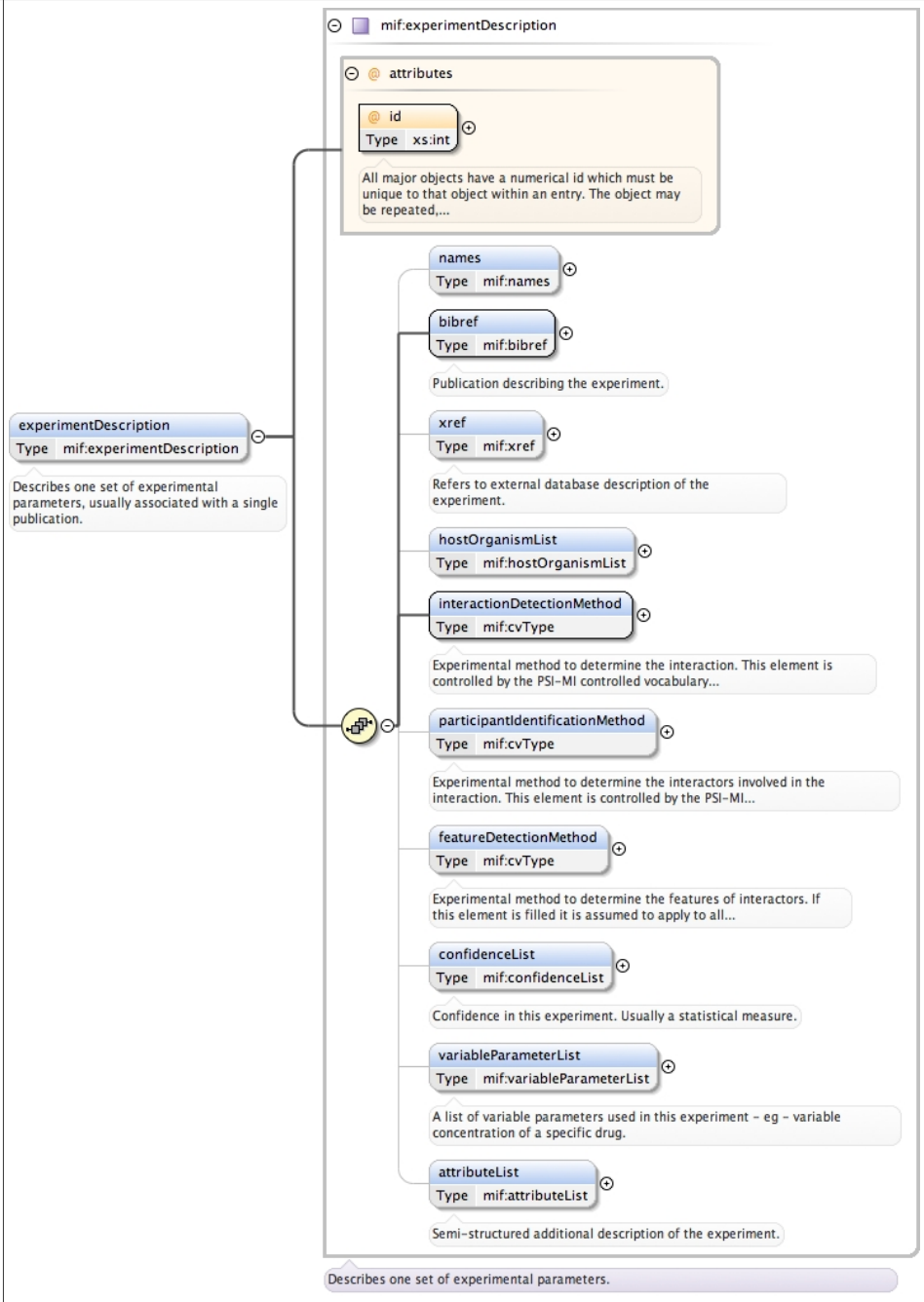
Source	`<xs:element name="availability" type="mif:availability" minOccurs="0" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>Describes data availability, e.g. through a copyright statement. If no availability is given, the data is assumed to be freely available.</xs:documentation> </xs:annotation> </xs:element>`

Element `mif:entry / mif:experimentList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentDescriptionList

Properties	content:	complex
	minOccurs:	0
Model	mif:experimentDescription*	
Children	mif:experimentDescription	
Instance	<mif:experimentList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentDescription id="">{0,unbounded}</mif:experimentDescription> </mif:experimentList>	
Source	<xs:element name="experimentList" type="mif:experimentDescriptionList" minOccurs="0"/>	

Element mif:experimentDescriptionList / mif:experimentDescription

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes one set of experimental parameters, usually associated with a single publication.
Diagram	
Type	mif:experimentDescription	
Properties	content:	complex

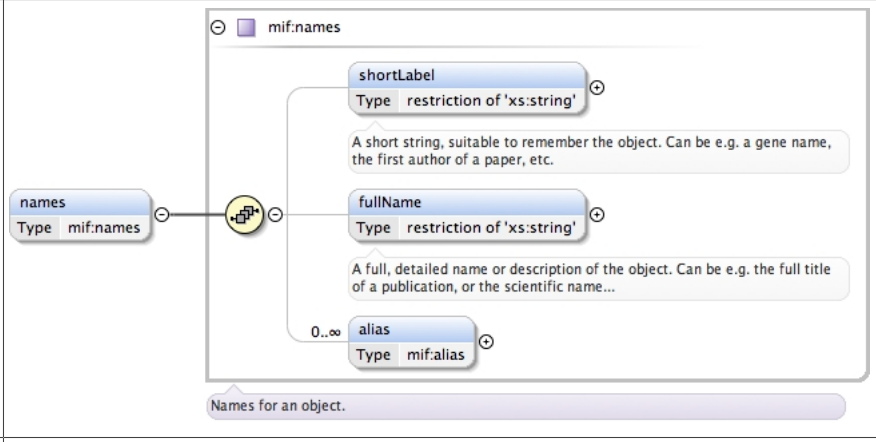
	minOccurs: 0 maxOccurs: unbounded
Model	mif:names{0,1} , mif:bibref , mif:xref{0,1} , mif:hostOrganismList{0,1} , mif:interactionDetectionMethod , mif:participantIdentificationMethod{0,1} , mif:featureDetectionMethod{0,1} , mif:confidenceList{0,1} , mif:variableParameterList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bibref, mif:confidenceList, mif:featureDetectionMethod, mif:hostOrganismList, mif:interactionDetectionMethod, mif:names, mif:participantIdentificationMethod, mif:variableParameterList, mif:xref

Instance	`<mif:experimentDescription id="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`<mif:names>{0,1}</mif:names>`
	`<mif:bibref>{1,1}</mif:bibref>`
	`<mif:xref>{0,1}</mif:xref>`
	`<mif:hostOrganismList>{0,1}</mif:hostOrganismList>`
	`<mif:interactionDetectionMethod>{1,1}</mif:interactionDetectionMethod>`
	`<mif:participantIdentificationMethod>{0,1}</mif:participantIdentificationMethod>`
	`<mif:featureDetectionMethod>{0,1}</mif:featureDetectionMethod>`
	`<mif:confidenceList>{0,1}</mif:confidenceList>`
	`<mif:variableParameterList>{0,1}</mif:variableParameterList>`
	`<mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:experimentDescription>`

Attributes	**QName**: **id** — **Type**: xs:int — **Fixed**: — **Default**: — **Use**: required All major objects have a numerical id which must be unique to that object within an entry. The object may be repeated, though, e.g. in the denormalised representation.

Source	`<xs:element name="experimentDescription" type="mif:experimentDescription" minOccurs="0" maxOccurs="unbounded">`
	`<xs:annotation>`
	`<xs:documentation>Describes one set of experimental parameters, usually associated with a single publication.</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`

Element `mif:experimentDescription / mif:names`

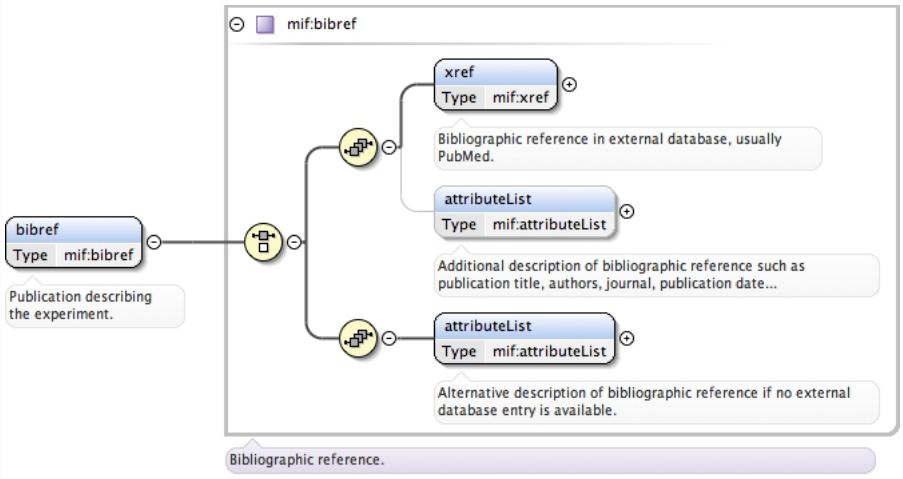
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`<mif:shortLabel>{0,1}</mif:shortLabel>`
	`<mif:fullName>{0,1}</mif:fullName>`
	`<mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

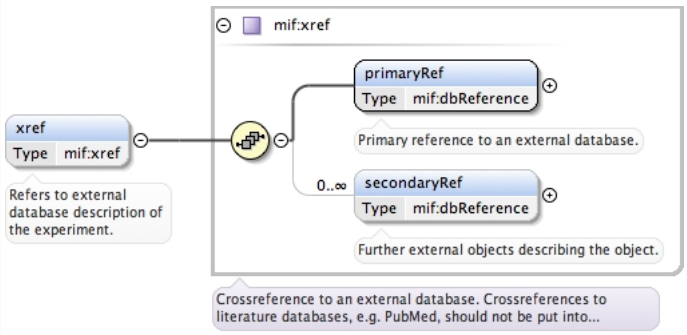
Source	`<xs:element name="names" type="mif:names" minOccurs="0"/>`

Element `mif:experimentDescription / mif:bibref`

Namespace	http://psi.hupo.org/mi/mif300

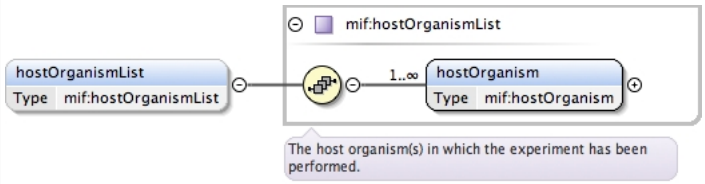
Annotations	Publication describing the experiment.
Diagram	
Type	mif:bibref
Properties	content: complex
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref
Instance	<mif:bibref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:xref>{1,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> <mif:attributeList>{1,1}</mif:attributeList> </mif:bibref>
Source	<xs:element name="bibref" type="mif:bibref"> <xs:annotation> <xs:documentation>Publication describing the experiment.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentDescription / mif:xref

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to external database description of the experiment.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation>

```
    <xs:documentation>Refers to external database description of the experiment.</xs:documentation>
  </xs:annotation>
</xs:element>
```

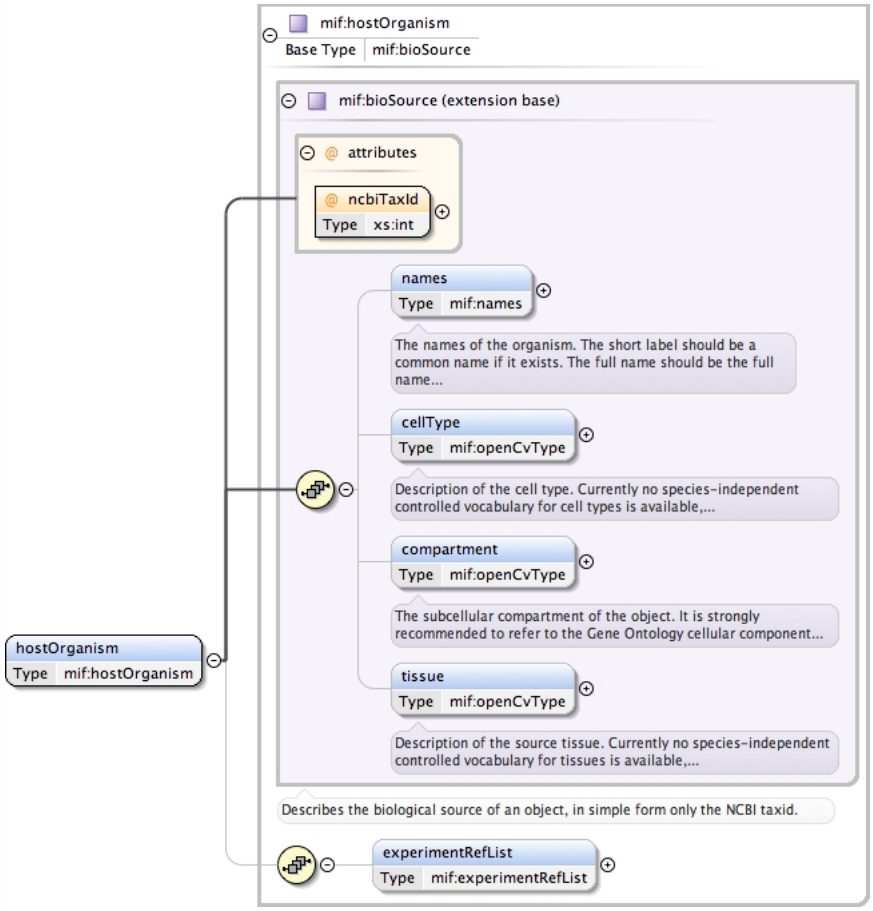
Element `mif:experimentDescription / mif:hostOrganismList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:hostOrganismList
Properties	content: complex minOccurs: 0
Model	mif:hostOrganism+
Children	mif:hostOrganism

Instance	`<mif:hostOrganismList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:hostOrganism ncbiTaxId="">{1,unbounded}</mif:hostOrganism>`
	`</mif:hostOrganismList>`

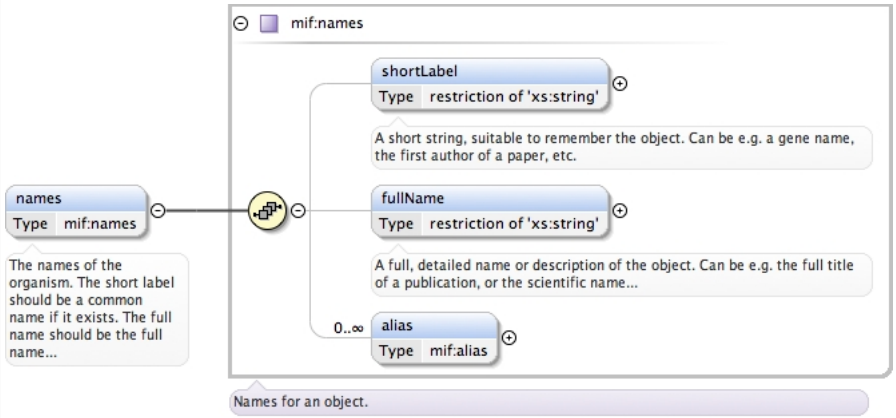
Source	`<xs:element name="hostOrganismList" type="mif:hostOrganismList" minOccurs="0"/>`

Element `mif:hostOrganismList / mif:hostOrganism`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:hostOrganism
Type hierarchy	• mif:bioSource

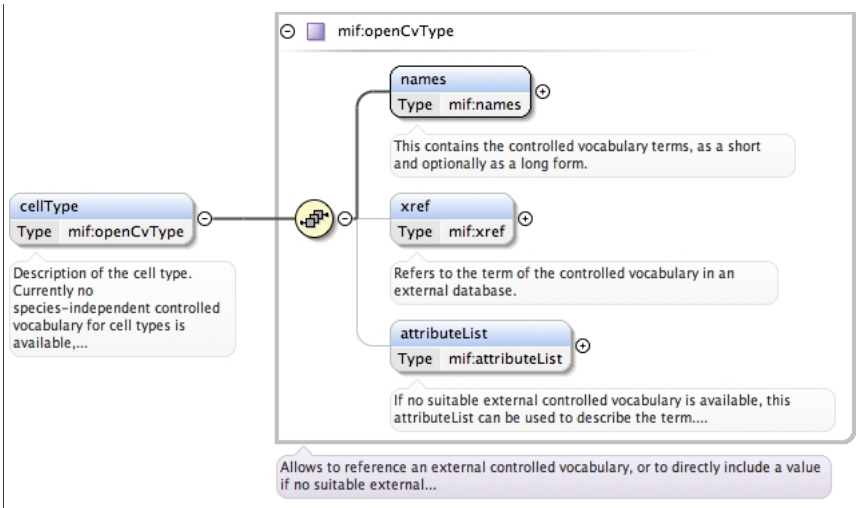
	• mif:hostOrganism
Properties	content: complex maxOccurs: unbounded
Model	mif:names{0,1} , mif:cellType{0,1} , mif:compartment{0,1} , mif:tissue{0,1} , mif:experimentRefList{0,1}
Children	mif:cellType, mif:compartment, mif:experimentRefList, mif:names, mif:tissue
Instance	<mif:hostOrganism ncbiTaxId="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{0,1}</mif:names> <mif:cellType>{0,1}</mif:cellType> <mif:compartment>{0,1}</mif:compartment> <mif:tissue>{0,1}</mif:tissue> <mif:experimentRefList>{0,1}</mif:experimentRefList> </mif:hostOrganism>
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **ncbiTaxId** / xs:int / / / required
Source	<xs:element name="hostOrganism" type="mif:hostOrganism" maxOccurs="unbounded"/>

Element mif:bioSource / mif:names

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The names of the organism. The short label should be a common name if it exists. The full name should be the full name of the species (i.e. genus species).
Diagram	
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel
Instance	<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:shortLabel>{0,1}</mif:shortLabel> <mif:fullName>{0,1}</mif:fullName> <mif:alias type="" typeAc="">{0,unbounded}</mif:alias> </mif:names>
Source	<xs:element name="names" type="mif:names" minOccurs="0"> <xs:annotation> <xs:documentation>The names of the organism. The short label should be a common name if it exists. The full name should be the full name of the species (i.e. genus species).</xs:documentation> </xs:annotation> </xs:element>

Element mif:bioSource / mif:cellType

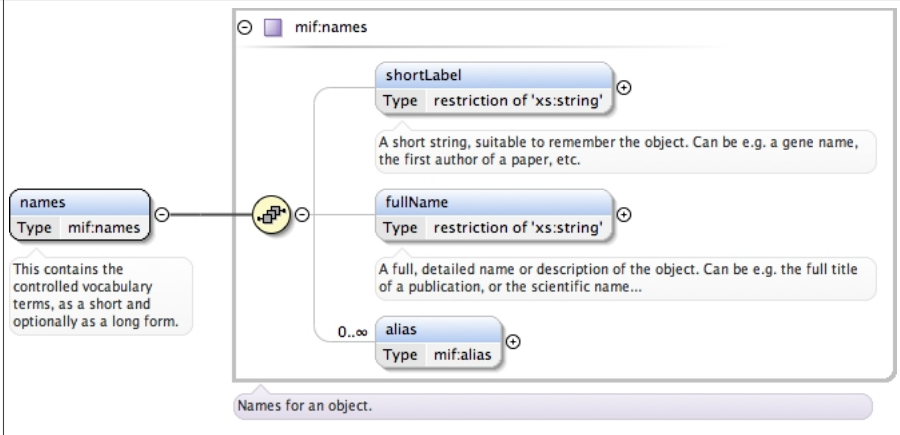
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Description of the cell type. Currently no species-independent controlled vocabulary for cell types is available, therefore the choice of reference database(s) is open to the data provider.

Diagram	
Type	mif:openCvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref

Instance	`<mif:cellType xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:cellType>`

Source	`<xs:element name="cellType" type="mif:openCvType" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Description of the cell type. Currently no species-independent controlled vocabulary for cell types is available, therefore the choice of reference database(s) is open to the data provider.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:openCvType / mif:names`

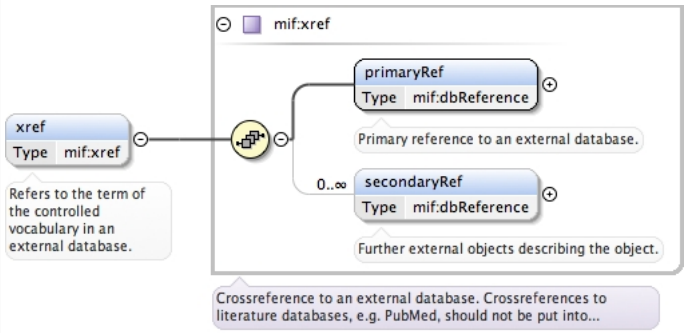
Namespace	http://psi.hupo.org/mi/mif300
Annotations	This contains the controlled vocabulary terms, as a short and optionally as a long form.
Diagram	
Type	mif:names
Properties	content: complex
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`

	`</mif:names>`

Source	`<xs:element name="names" type="mif:names">`
	`  <xs:annotation>`
	`  <xs:documentation>This contains the controlled vocabulary terms, as a short and optionally as a long form.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

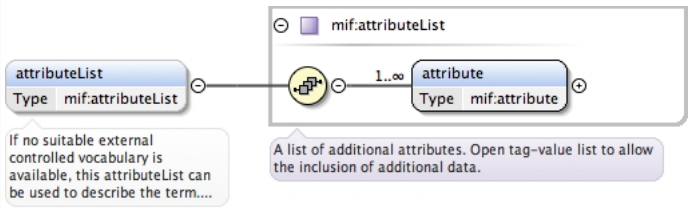
Element `mif:openCvType / mif:xref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the term of the controlled vocabulary in an external database.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef

Instance	`<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef>`
	`  <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef>`
	`</mif:xref>`

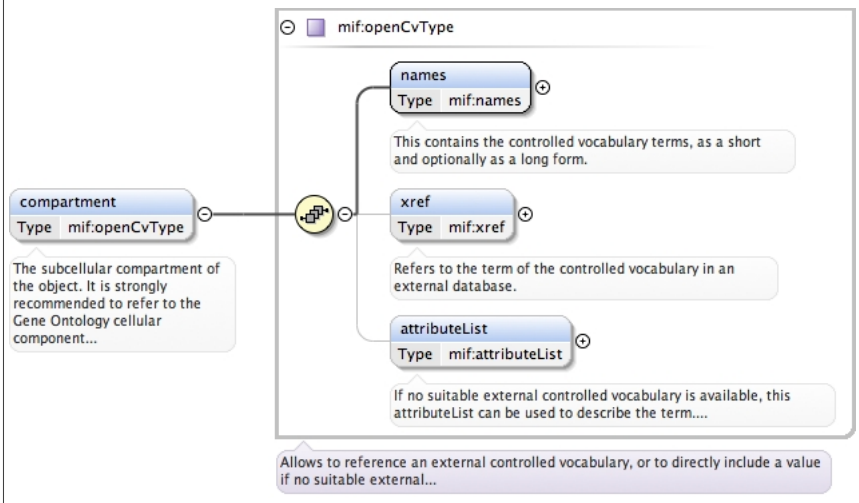
Source	`<xs:element name="xref" type="mif:xref" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the term of the controlled vocabulary in an external database.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:openCvType / mif:attributeList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no suitable external controlled vocabulary is available, this attributeList can be used to describe the term. Example: Attribute name: Mouse atlas tissue name; attribute value: spinal cord, day 30.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">`

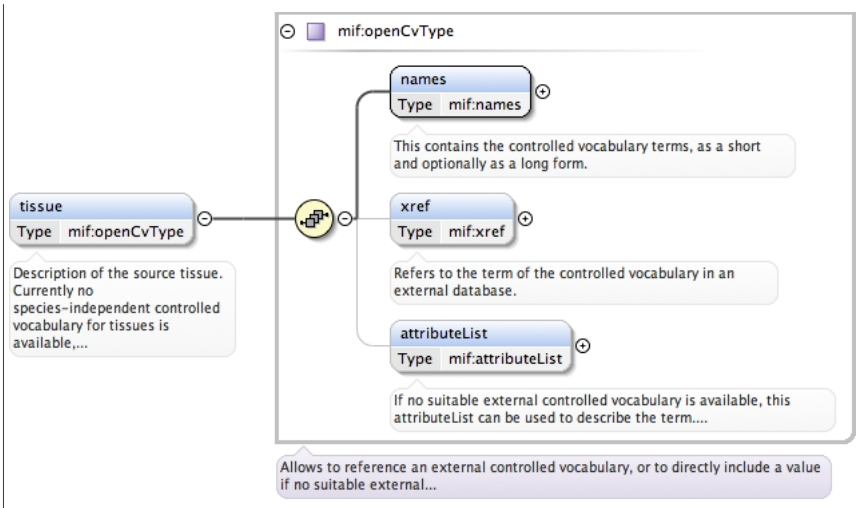
	<mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>If no suitable external controlled vocabulary is available, this attributeList can be used to describe the term. Example: Attribute name: Mouse atlas tissue name; attribute value: spinal cord, day 30.</xs:documentation> </xs:annotation> </xs:element>

Element mif:bioSource / mif:compartment

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The subcellular compartment of the object. It is strongly recommended to refer to the Gene Ontology cellular component in this element.
Diagram	
Type	mif:openCvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref
Instance	<mif:compartment xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> </mif:compartment>
Source	<xs:element name="compartment" type="mif:openCvType" minOccurs="0"> <xs:annotation> <xs:documentation>The subcellular compartment of the object. It is strongly recommended to refer to the Gene Ontology cellular component in this element.</xs:documentation> </xs:annotation> </xs:element>

Element mif:bioSource / mif:tissue

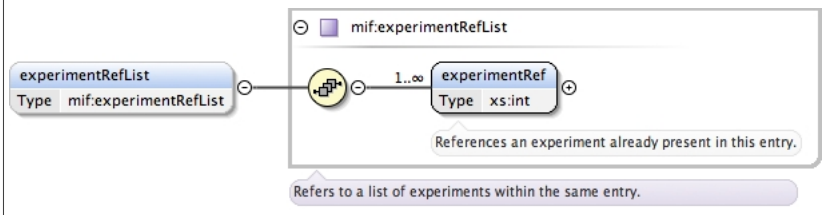
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Description of the source tissue. Currently no species-independent controlled vocabulary for tissues is available, therefore the choice of reference database(s) is open to the data provider.

Diagram	
Type	mif:openCvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref

Instance	`<mif:tissue xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:tissue>`

Source	`<xs:element name="tissue" type="mif:openCvType" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Description of the source tissue. Currently no species-independent controlled vocabulary for tissues is available, therefore the choice of reference database(s) is open to the data provider.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:hostOrganism / mif:experimentRefList`

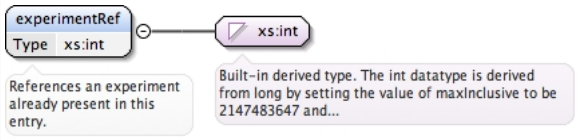
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"/>`

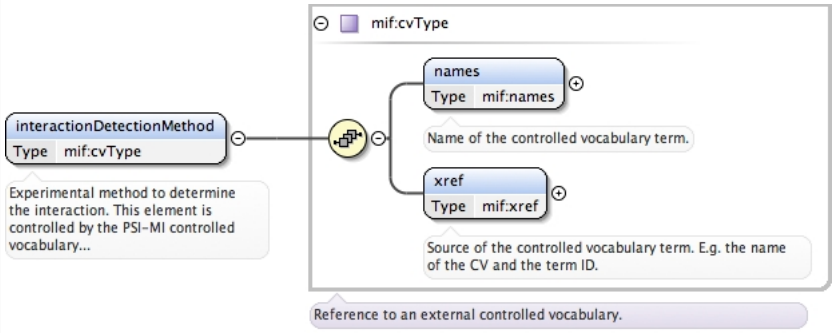
Element `mif:experimentRefList / mif:experimentRef`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an experiment already present in this entry.

Diagram	
Type	xs:int
Properties	content: simple maxOccurs: unbounded

Source	`<xs:element name="experimentRef" type="xs:int" maxOccurs="unbounded">`
	`  <xs:annotation>`
	`  <xs:documentation>References an experiment already present in this entry.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:experimentDescription / mif:interactionDetectionMethod`

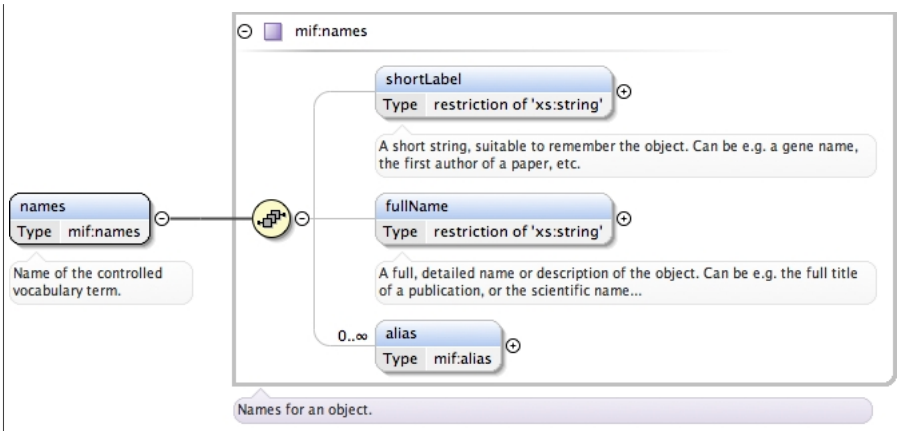
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Experimental method to determine the interaction. This element is controlled by the PSI-MI controlled vocabulary "interaction detection method", root term id MI:0001.
Diagram	
Type	mif:cvType
Properties	content: complex
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:interactionDetectionMethod xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:interactionDetectionMethod>`

Source	`<xs:element name="interactionDetectionMethod" type="mif:cvType">`
	`  <xs:annotation>`
	`  <xs:documentation>Experimental method to determine the interaction. This element is controlled by the PSI-MI controlled vocabulary "interaction detection method", root term id MI:0001.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:cvType / mif:names`

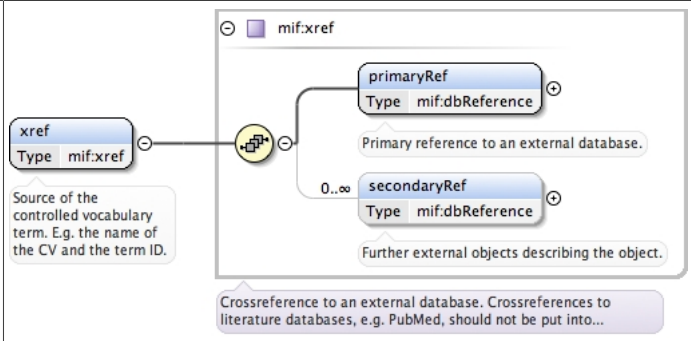
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Name of the controlled vocabulary term.

Diagram	
Type	mif:names
Properties	content: complex
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

Source	`<xs:element name="names" type="mif:names">`
	`  <xs:annotation>`
	`  <xs:documentation>Name of the controlled vocabulary term.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

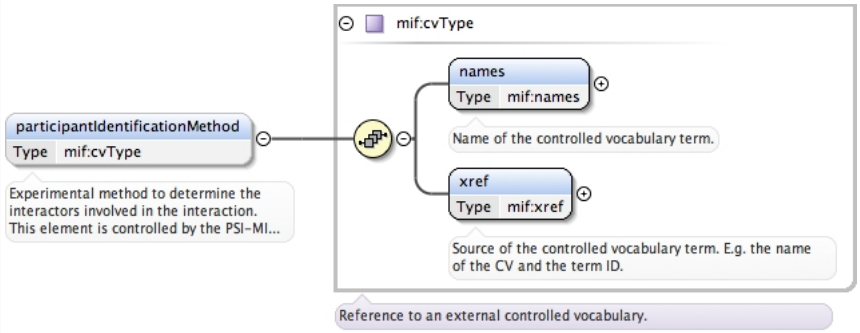
Element `mif:cvType / mif:xref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Source of the controlled vocabulary term. E.g. the name of the CV and the term ID.
Diagram	
Type	mif:xref
Properties	content: complex
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef

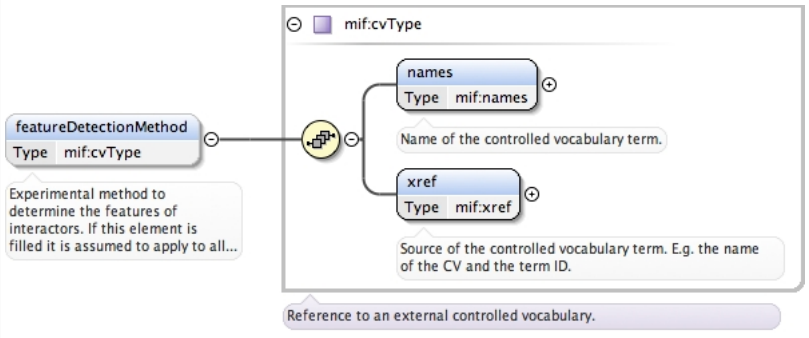
Instance	`<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef>`
	`  <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef>`
	`</mif:xref>`

Source	`<xs:element name="xref" type="mif:xref">`
	`  <xs:annotation>`
	`  <xs:documentation>Source of the controlled vocabulary term. E.g. the name of the CV and the term ID.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:experimentDescription / mif:participantIdentificationMethod

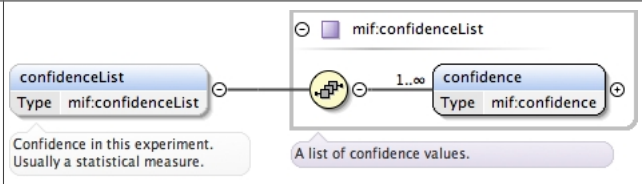
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Experimental method to determine the interactors involved in the interaction. This element is controlled by the PSI-MI controlled vocabulary "participant identification method", root term id MI:0002.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:participantIdentificationMethod xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:participantIdentificationMethod>
Source	<xs:element name="participantIdentificationMethod" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>Experimental method to determine the interactors involved in the interaction. This element is controlled by the PSI-MI controlled vocabulary "participant identification method", root term id MI:0002.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentDescription / mif:featureDetectionMethod

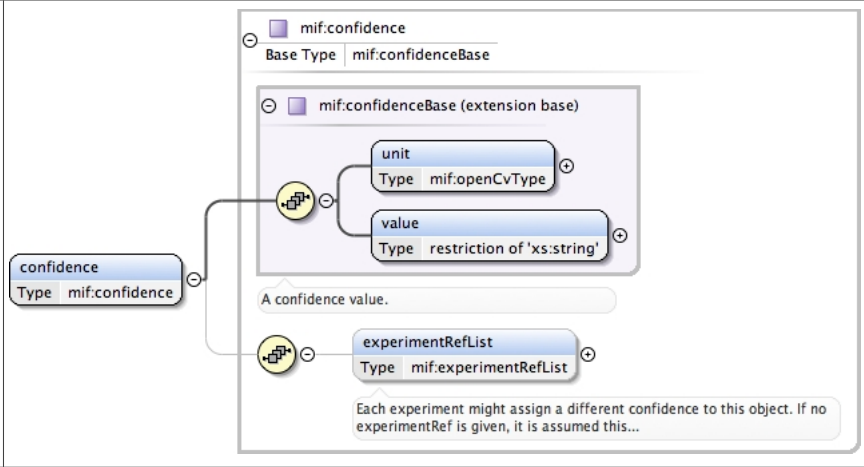
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Experimental method to determine the features of interactors. If this element is filled it is assumed to apply to all features described in the experiment. But can be overridden by the featureDetectionMethod given in the individual feature. This element is controlled by the PSI-MI controlled vocabulary "feature detection method", root term id MI:0003.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:featureDetectionMethod xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names>

	<mif:xref>{1,1}</mif:xref> </mif:featureDetectionMethod>
Source	<xs:element name="featureDetectionMethod" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>Experimental method to determine the features of interactors. If this element is filled it is assumed to apply to all features described in the experiment. But can be overridden by the featureDetectionMethod given in the individual feature. This element is controlled by the PSI-MI controlled vocabulary "feature detection method", root term id MI:0003.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentDescription / mif:confidenceList

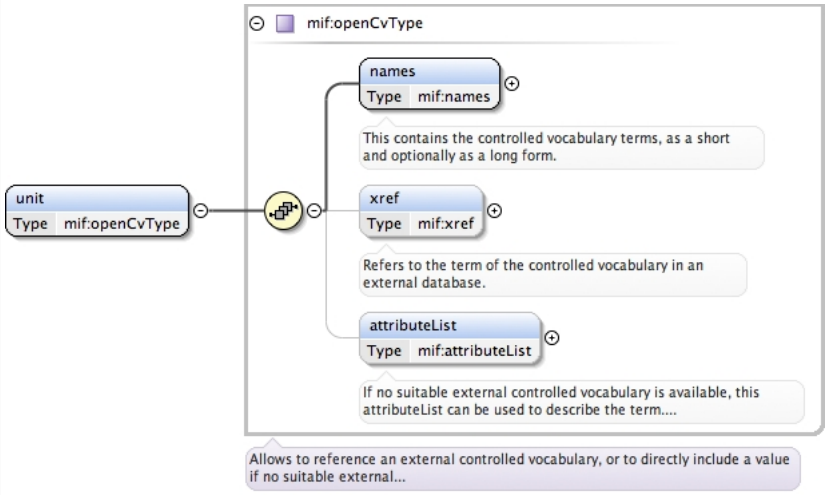
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Confidence in this experiment. Usually a statistical measure.
Diagram	
Type	mif:confidenceList
Properties	content: complex minOccurs: 0
Model	mif:confidence+
Children	mif:confidence
Instance	<mif:confidenceList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:confidence>{1,unbounded}</mif:confidence> </mif:confidenceList>
Source	<xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0"> <xs:annotation> <xs:documentation>Confidence in this experiment. Usually a statistical measure.</ xs:documentation> <xs:annotation> </xs:element>

Element mif:confidenceList / mif:confidence

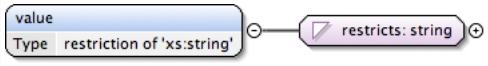
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:confidence
Type hierarchy	• mif:confidenceBase • mif:confidence
Properties	content: complex maxOccurs: unbounded
Model	mif:unit , mif:value , mif:experimentRefList{0,1}

Children	mif:experimentRefList, mif:unit, mif:value
Instance	<mif:confidence xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:unit>{1,1}</mif:unit> <mif:value>{1,1}</mif:value> <mif:experimentRefList>{0,1}</mif:experimentRefList> </mif:confidence>
Source	<xs:element name="confidence" type="mif:confidence" maxOccurs="unbounded"/>

Element mif:confidenceBase / mif:unit

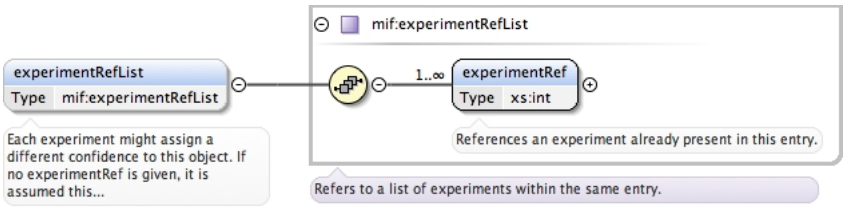
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:openCvType
Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref
Instance	<mif:unit xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> </mif:unit>
Source	<xs:element name="unit" type="mif:openCvType"/>

Element mif:confidenceBase / mif:value

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	restriction of xs:string
Properties	content: simple
Facets	minLength 1
Source	<xs:element name="value"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:element>

Element mif:confidence / mif:experimentRefList

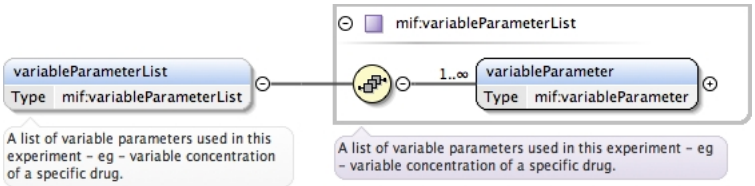
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Each experiment might assign a different confidence to this object. If no experimentRef is given, it is assumed this confidence refers to all experiments linked to the object.

Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Each experiment might assign a different confidence to this object. If no experimentRef is given, it is assumed this confidence refers to all experiments linked to the object.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:experimentDescription / mif:variableParameterList`

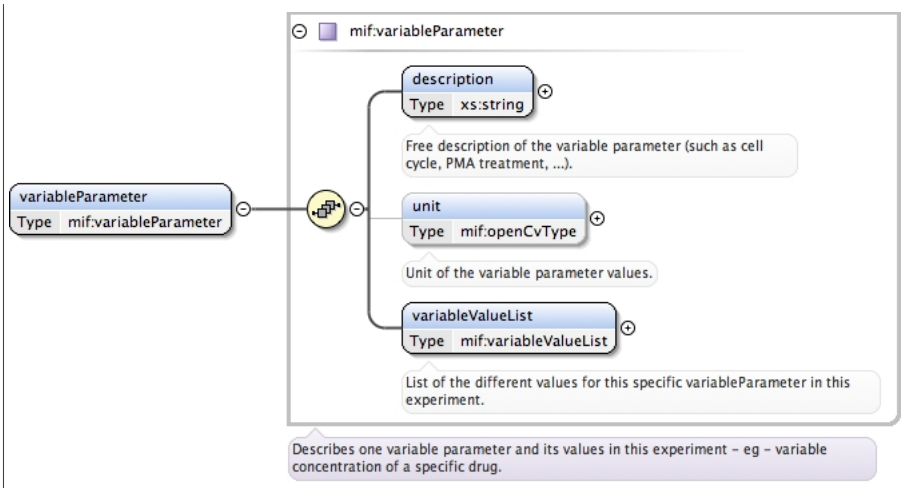
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of variable parameters used in this experiment - eg - variable concentration of a specific drug.
Diagram	
Type	mif:variableParameterList
Properties	content: complex minOccurs: 0
Model	mif:variableParameter+
Children	mif:variableParameter

Instance	`<mif:variableParameterList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:variableParameter>{1,unbounded}</mif:variableParameter>`
	`</mif:variableParameterList>`

Source	`<xs:element name="variableParameterList" type="mif:variableParameterList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>A list of variable parameters used in this experiment - eg - variable concentration of a specific drug.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:variableParameterList / mif:variableParameter`

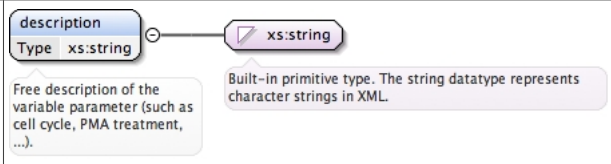
Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:variableParameter
Properties	content: complex maxOccurs: unbounded
Model	mif:description , mif:unit{0,1} , mif:variableValueList
Children	mif:description, mif:unit, mif:variableValueList

Instance	`<mif:variableParameter xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:description>{1,1}</mif:description>`
	`  <mif:unit>{0,1}</mif:unit>`
	`  <mif:variableValueList>{1,1}</mif:variableValueList>`
	`</mif:variableParameter>`

Source	`<xs:element name="variableParameter" type="mif:variableParameter" maxOccurs="unbounded"/>`

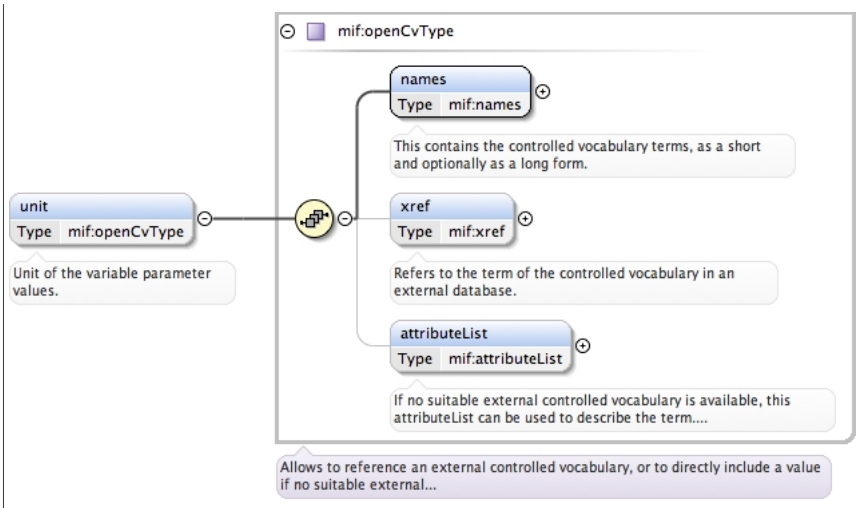
Element mif:variableParameter / mif:description

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Free description of the variable parameter (such as cell cycle, PMA treatment, ...).
Diagram	
Type	xs:string
Properties	content: simple

Source	`<xs:element name="description" type="xs:string">`
	`  <xs:annotation>`
	`  <xs:documentation>Free description of the variable parameter (such as cell cycle, PMA treatment, ...).</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:variableParameter / mif:unit

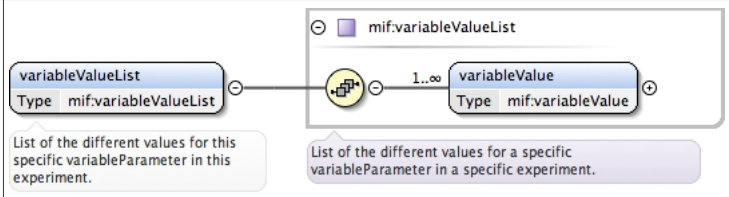
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Unit of the variable parameter values.

Diagram	
Type	mif:openCvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref

Instance	`<mif:unit xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:unit>`

Source	`<xs:element name="unit" type="mif:openCvType" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Unit of the variable parameter values.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:variableParameter / mif:variableValueList`

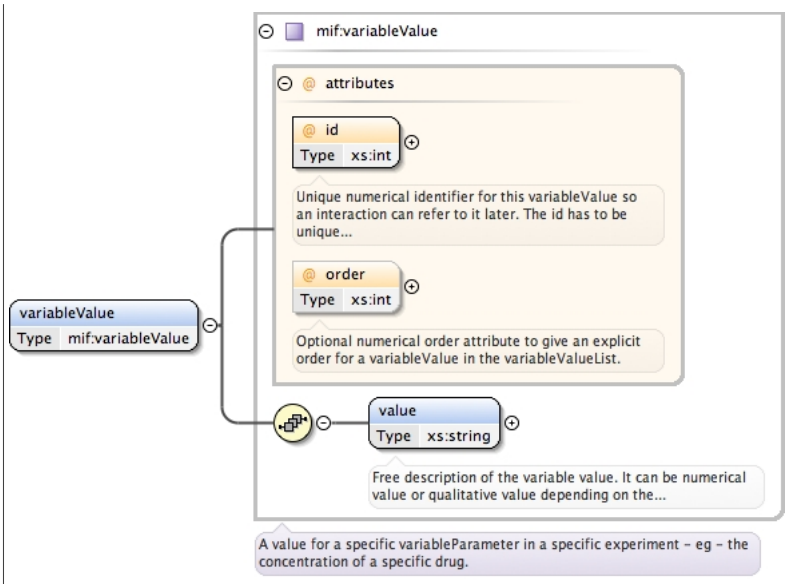
Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of the different values for this specific variableParameter in this experiment.
Diagram	
Type	mif:variableValueList
Properties	content: complex
Model	mif:variableValue+
Children	mif:variableValue

Instance	`<mif:variableValueList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:variableValue id="" order="">{1,unbounded}</mif:variableValue>`
	`</mif:variableValueList>`

Source	`<xs:element name="variableValueList" type="mif:variableValueList">`
	`  <xs:annotation>`
	`  <xs:documentation>List of the different values for this specific variableParameter in this experiment.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:variableValueList / mif:variableValue`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:variableValue
Properties	content: complex maxOccurs: unbounded
Model	mif:value
Children	mif:value

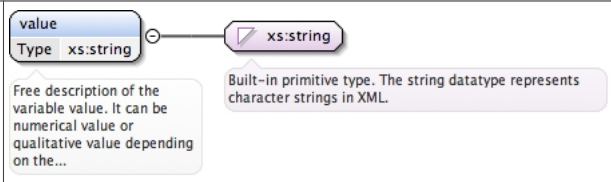
Instance	`<mif:variableValue id="" order="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:value>{1,1}</mif:value>`
	`</mif:variableValue>`

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	Unique numerical identifier for this variableValue so an interaction can refer to it later. The id has to be unique within a same entry.			
order	xs:int			optional
	Optional numerical order attribute to give an explicit order for a variableValue in the variableValueList.			

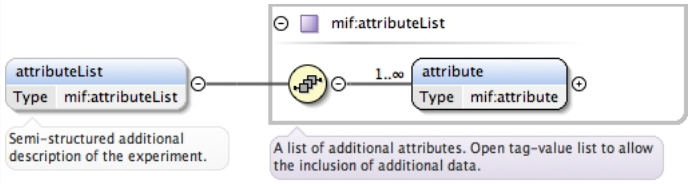
Source	`<xs:element name="variableValue" type="mif:variableValue" maxOccurs="unbounded"/>`

Element `mif:variableValue / mif:value`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Free description of the variable value. It can be numerical value or qualitative value depending on the variableParameter.
Diagram	
Type	xs:string
Properties	content: simple

Source	`<xs:element name="value" type="xs:string">`
	`  <xs:annotation>`
	`  <xs:documentation>Free description of the variable value. It can be numerical value or qualitative value depending on the variableParameter.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

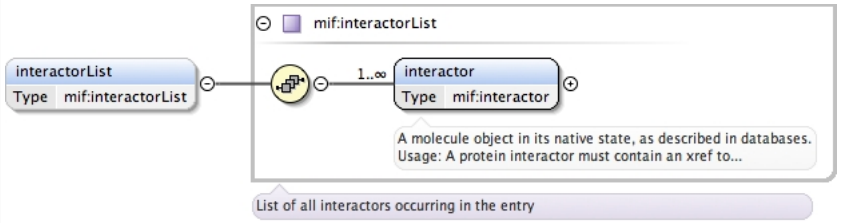
Element `mif:experimentDescription / mif:attributeList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Semi-structured additional description of the experiment.`
Diagram	
Type	mif:attributeList
Properties	content: `complex` minOccurs: `0`
Model	mif:attribute+
Children	mif:attribute

Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute>`
	`</mif:attributeList>`

Source	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Semi-structured additional description of the experiment.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:entry / mif:interactorList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:interactorList
Properties	content: `complex` minOccurs: `0`
Model	mif:interactor+
Children	mif:interactor

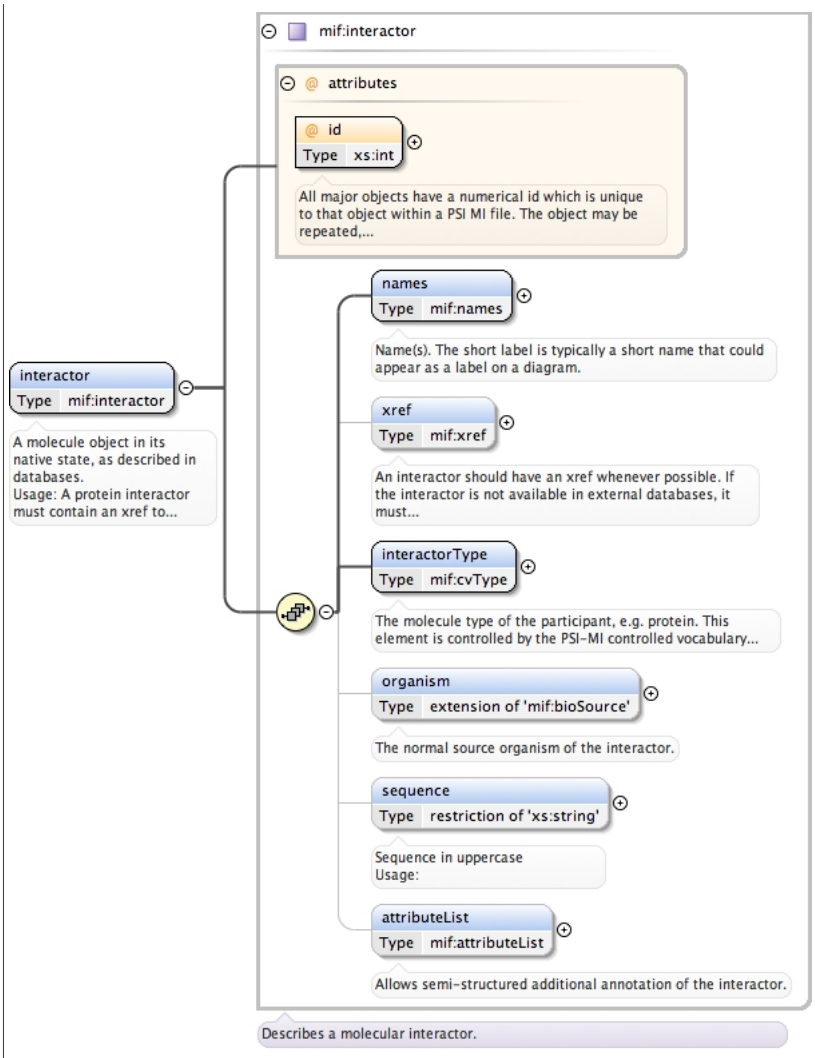
Instance	`<mif:interactorList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:interactor id="">{1,unbounded}</mif:interactor>`
	`</mif:interactorList>`

Source	`<xs:element name="interactorList" type="mif:interactorList" minOccurs="0"/>`

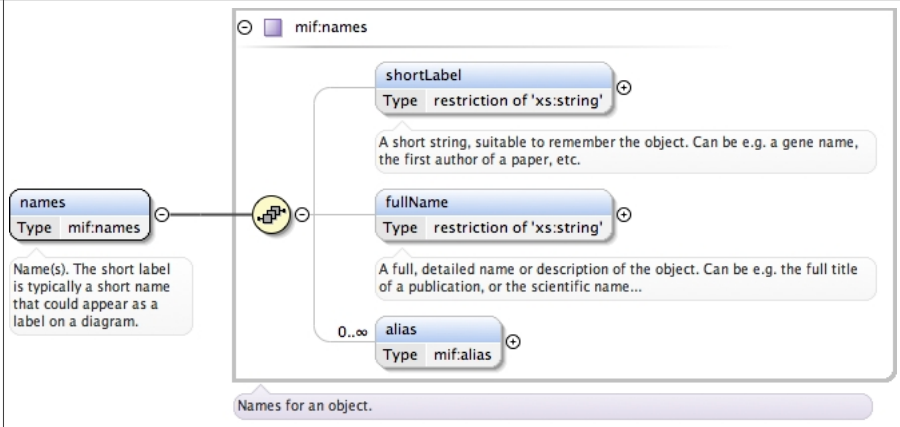
Element `mif:interactorList / mif:interactor`

Namespace	http://psi.hupo.org/mi/mif300

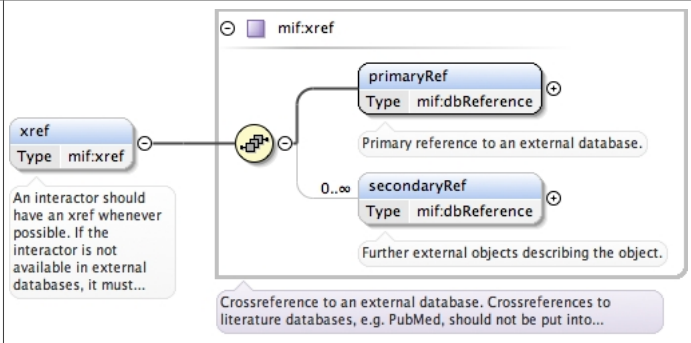
Annotations	`A molecule object in its native state, as described in databases.`
	
	`Usage: A protein interactor must contain an xref to UniProt and NCBI-GI where possible.`

<table>
<tr><td>Diagram</td><td> 
</td></tr>
<tr><td>Type</td><td>mif:interactor</td></tr>
<tr><td>Properties</td><td>content: complex
minOccurs: 1
maxOccurs: unbounded</td></tr>
<tr><td>Model</td><td>mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}</td></tr>
<tr><td>Children</td><td>mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref</td></tr>
<tr><td>Instance</td><td><pre>
<mif:interactor id="" xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:names>{1,1}</mif:names>
  <mif:xref>{0,1}</mif:xref>
  <mif:interactorType>{1,1}</mif:interactorType>
  <mif:organism ncbiTaxId="">{0,1}</mif:organism>
  <mif:sequence>{0,1}</mif:sequence>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:interactor>
</pre></td></tr>
<tr><td>Attributes</td><td>
<table>
<tr><th>QName</th><th>Type</th><th>Fixed</th><th>Default</th><th>Use</th></tr>
<tr><td>id</td><td>xs:int</td><td></td><td></td><td>required</td></tr>
<tr><td></td><td colspan="4">All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</td></tr>
</table>
</td></tr>
<tr><td>Source</td><td><pre>
<xs:element name="interactor" type="mif:interactor" minOccurs="1" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>A molecule object in its native state, as described in databases.</
xs:documentation>
    <xs:documentation>Usage: A protein interactor must contain an xref to UniProt and NCBI-GI where
 possible.</xs:documentation>
  </xs:annotation>
</xs:element>
</pre></td></tr>
</table>

Element mif:interactor / mif:names

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Name(s). The short label is typically a short name that could appear as a label on a diagram.
Diagram	
Type	mif:names
Properties	content: complex
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel
Instance	<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:shortLabel>{0,1}</mif:shortLabel> <mif:fullName>{0,1}</mif:fullName> <mif:alias type="" typeAc="">{0,unbounded}</mif:alias> </mif:names>
Source	<xs:element name="names" type="mif:names"> <xs:annotation> <xs:documentation>Name(s). The short label is typically a short name that could appear as a label on a diagram.</xs:documentation> </xs:annotation> </xs:element>

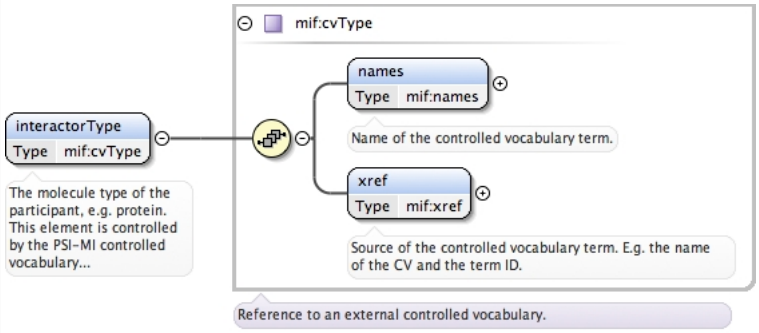
Element mif:interactor / mif:xref

Namespace	http://psi.hupo.org/mi/mif300
Annotations	An interactor should have an xref whenever possible. If the interactor is not available in external databases, it must be characterised within this object e.g. by its sequence.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef>

	`</mif:xref>`

Source	`<xs:element name="xref" type="mif:xref" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>An interactor should have an xref whenever possible. If the interactor is not available in external databases, it must be characterised within this object e.g. by its sequence.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:interactor / mif:interactorType`

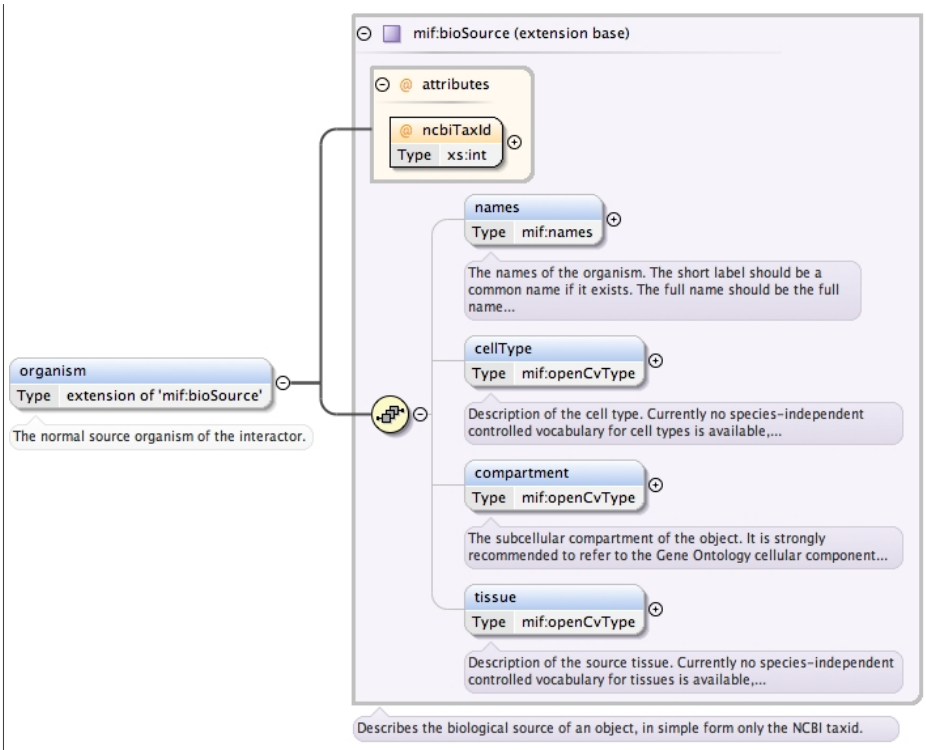
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The molecule type of the participant, e.g. protein. This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:0313.
Diagram	
Type	mif:cvType
Properties	content: complex
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:interactorType xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:interactorType>`

Source	`<xs:element name="interactorType" type="mif:cvType">`
	`  <xs:annotation>`
	`  <xs:documentation>The molecule type of the participant, e.g. protein. This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:0313.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:interactor / mif:organism`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The normal source organism of the interactor.

Diagram	
Type	extension of mif:bioSource
Type hierarchy	• mif:bioSource
Properties	content: `complex` minOccurs: `0`
Model	mif:names{0,1} , mif:cellType{0,1} , mif:compartment{0,1} , mif:tissue{0,1}
Children	mif:cellType, mif:compartment, mif:names, mif:tissue

Instance	`<mif:organism ncbiTaxId="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{0,1}</mif:names>`
	`  <mif:cellType>{0,1}</mif:cellType>`
	`  <mif:compartment>{0,1}</mif:compartment>`
	`  <mif:tissue>{0,1}</mif:tissue>`
	`</mif:organism>`

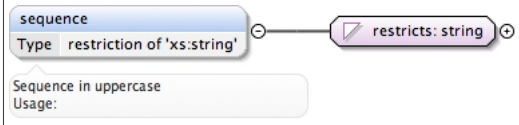
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **ncbiTaxId** / xs:int / / / required

Source	`<xs:element name="organism" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>The normal source organism of the interactor.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:complexType>`
	`  <xs:complexContent>`
	`  <xs:extension base="mif:bioSource"/>`
	`  </xs:complexContent>`
	`  </xs:complexType>`
	`</xs:element>`

Element `mif:interactor / mif:sequence`

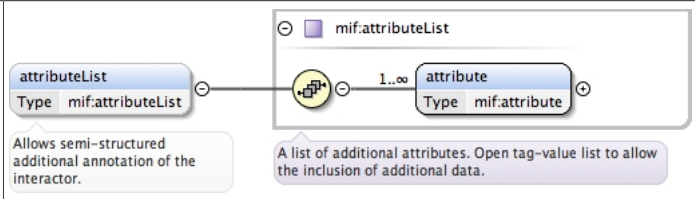
Namespace	http://psi.hupo.org/mi/mif300

Annotations	`Sequence in uppercase`
	
	`Usage:`

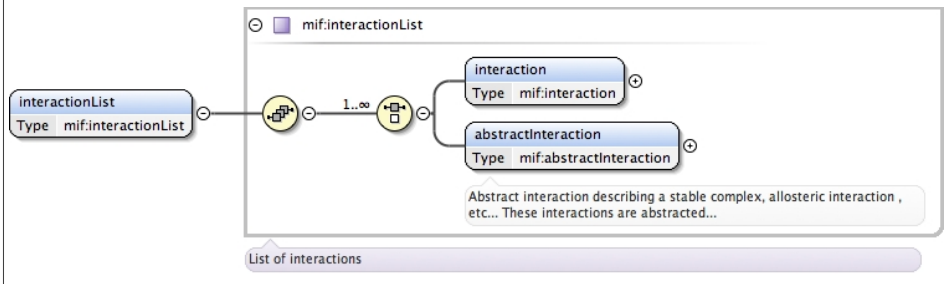
Diagram	
Type	restriction of xs:string

Properties	content:	simple
	minOccurs:	0
Facets	minLength	1
Source	<xs:element name="sequence" minOccurs="0"> <xs:annotation> <xs:documentation>Sequence in uppercase</xs:documentation> <xs:documentation>Usage:</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:element>	

Element mif:interactor / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Allows semi-structured additional annotation of the interactor.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>Allows semi-structured additional annotation of the interactor.</ xs:documentation> </xs:annotation> </xs:element>

Element mif:entry / mif:interactionList

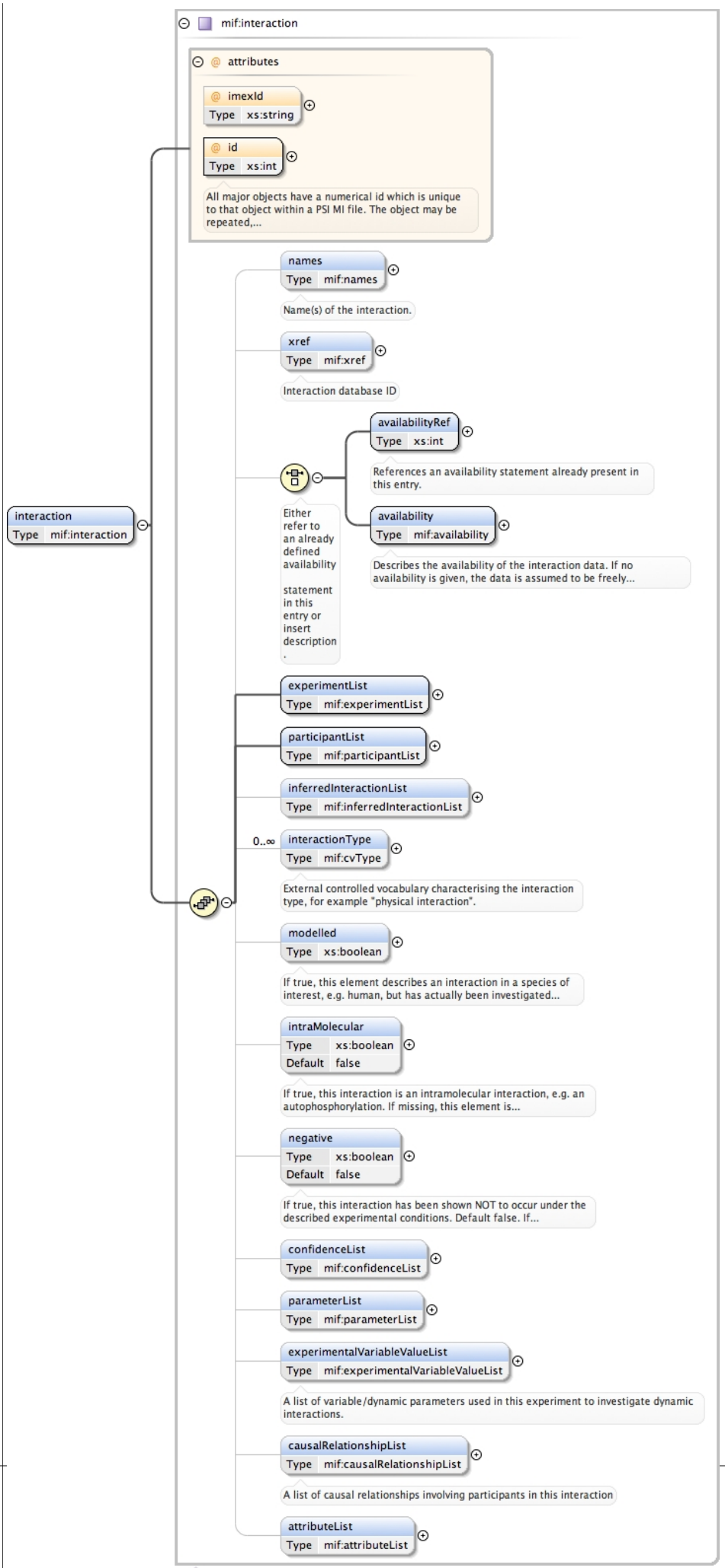
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:interactionList
Properties	content: complex
Model	(mif:interaction | mif:abstractInteraction)
Children	mif:abstractInteraction, mif:interaction
Instance	<mif:interactionList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:interaction id="" imexId="">{1,1}</mif:interaction> <mif:abstractInteraction id="">{1,1}</mif:abstractInteraction>

	`</mif:interactionList>`
Source	`<xs:element name="interactionList" type="mif:interactionList"/>`

Element `mif:interactionList / mif:interaction`

Namespace	http://psi.hupo.org/mi/mif300

Diagram


mif:interaction
attributes
imexId
Type xs:string
id
Type xs:int
All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated,...
interaction
Type mif:interaction
names
Type mif:names
Name(s) of the interaction.
xref
Type mif:xref
Interaction database ID
availabilityRef
Type xs:int
References an availability statement already present in this entry.
availability
Type mif:availability
Describes the availability of the interaction data. If no availability is given, the data is assumed to be freely...
Either refer to an already defined availability statement in this entry or insert description .
experimentList
Type mif:experimentList
participantList
Type mif:participantList
inferredInteractionList
Type mif:inferredInteractionList
0..∞
interactionType
Type mif:cvType
External controlled vocabulary characterising the interaction type, for example "physical interaction".
modelled
Type xs:boolean
If true, this element describes an interaction in a species of interest, e.g. human, but has actually been investigated...
intraMolecular
Type xs:boolean
Default false
If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is...
negative
Type xs:boolean
Default false
If true, this interaction has been shown NOT to occur under the described experimental conditions. Default false. If...
confidenceList
Type mif:confidenceList
parameterList
Type mif:parameterList
experimentalVariableValueList
Type mif:experimentalVariableValueList
A list of variable/dynamic parameters used in this experiment to investigate dynamic interactions.
causalRelationshipList
Type mif:causalRelationshipList
A list of causal relationships involving participants in this interaction
attributeList
Type mif:attributeList

Type	mif:interaction
Properties	content: complex
Model	mif:names{0,1} , mif:xref{0,1} , (mif:availabilityRef | mif:availability) , mif:experimentList , mif:participantList , mif:inferredInteractionList{0,1} , mif:interactionType* , mif:modelled{0,1} , mif:intraMolecular{0,1} , mif:negative{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , mif:experimentalVariableValueList{0,1} , mif:causalRelationshipList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:availability, mif:availabilityRef, mif:causalRelationshipList, mif:confidenceList, mif:experimentList, mif:experimentalVariableValueList, mif:inferredInteractionList, mif:interactionType, mif:intraMolecular, mif:modelled, mif:names, mif:negative, mif:parameterList, mif:participantList, mif:xref

Instance

```
<mif:interaction id="" imexId="" xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:names>{0,1}</mif:names>
  <mif:xref>{0,1}</mif:xref>
  <mif:availabilityRef>{1,1}</mif:availabilityRef>
  <mif:availability id="">{1,1}</mif:availability>
  <mif:experimentList>{1,1}</mif:experimentList>
  <mif:participantList>{1,1}</mif:participantList>
  <mif:inferredInteractionList>{0,1}</mif:inferredInteractionList>
  <mif:interactionType>{0,unbounded}</mif:interactionType>
  <mif:modelled>{0,1}</mif:modelled>
  <mif:intraMolecular>{0,1}</mif:intraMolecular>
  <mif:negative>{0,1}</mif:negative>
  <mif:confidenceList>{0,1}</mif:confidenceList>
  <mif:parameterList>{0,1}</mif:parameterList>
  <mif:experimentalVariableValueList>{0,1}</mif:experimentalVariableValueList>
  <mif:causalRelationshipList>{0,1}</mif:causalRelationshipList>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:interaction>
```

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			
imexId	xs:string			optional

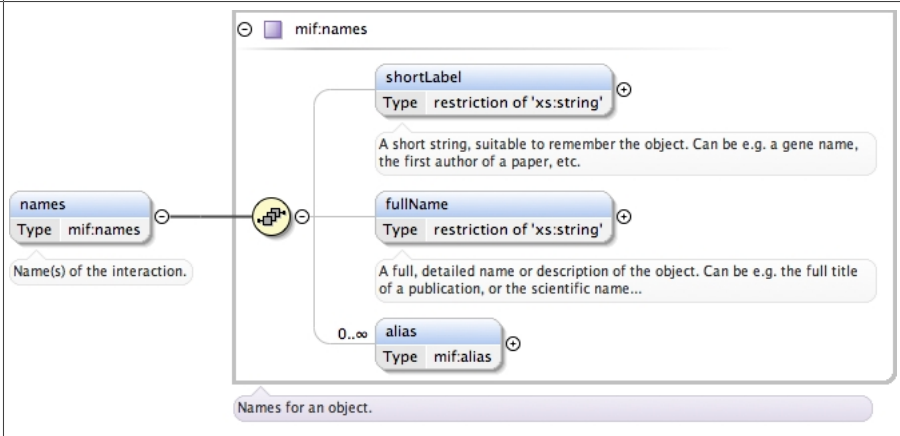
Source

```
<xs:element name="interaction" type="mif:interaction"/>
```

Element mif:interaction / mif:names

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Name(s) of the interaction.

Diagram



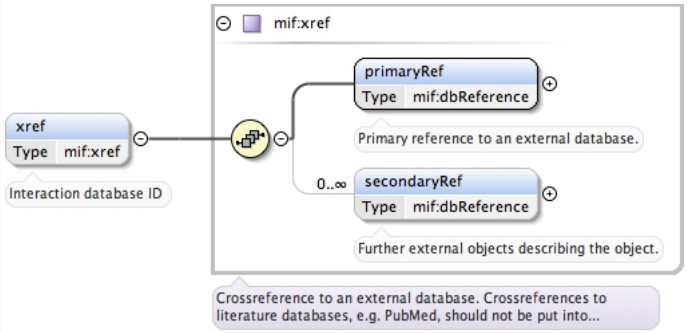
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance

```
<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:shortLabel>{0,1}</mif:shortLabel>
  <mif:fullName>{0,1}</mif:fullName>
  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>
</mif:names>
```

Source	<xs:element name="names" type="mif:names" minOccurs="0"> <xs:annotation> <xs:documentation>Name(s) of the interaction.</xs:documentation> </xs:annotation> </xs:element>

Element mif:interaction / mif:xref

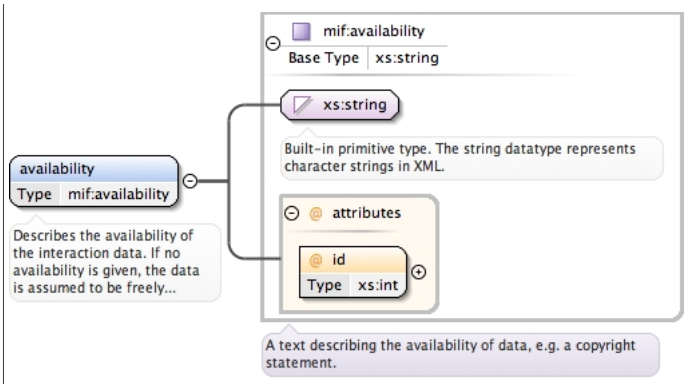
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Interaction database ID
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Interaction database ID</xs:documentation> </xs:annotation> </xs:element>

Element mif:interaction / mif:availabilityRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an availability statement already present in this entry.
Diagram	
Type	xs:int
Properties	content: simple
Source	<xs:element name="availabilityRef" type="xs:int"> <xs:annotation> <xs:documentation>References an availability statement already present in this entry.</xs:documentation> </xs:annotation> </xs:element>

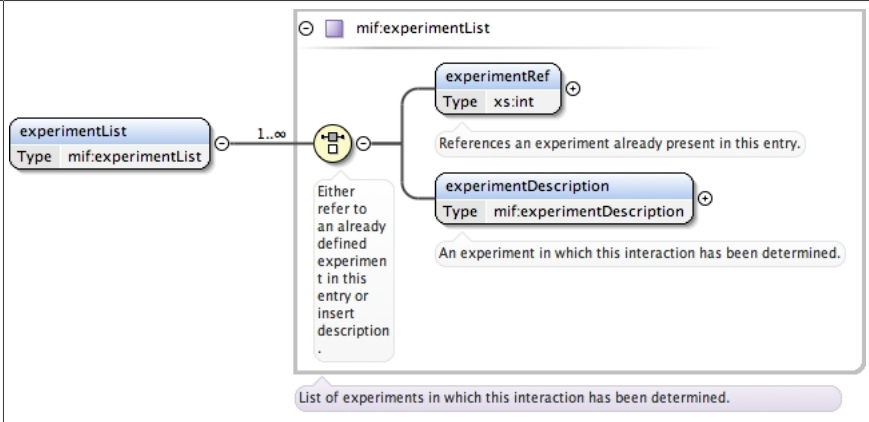
Element mif:interaction / mif:availability

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes the availability of the interaction data. If no availability is given, the data is assumed to be freely available.

Diagram	
Type	mif:availability
Properties	content: complex
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **id** / xs:int / / / required

Source	`<xs:element name="availability" type="mif:availability">`
	`  <xs:annotation>`
	`  <xs:documentation>Describes the availability of the interaction data. If no availability is given, the data is assumed to be freely available.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

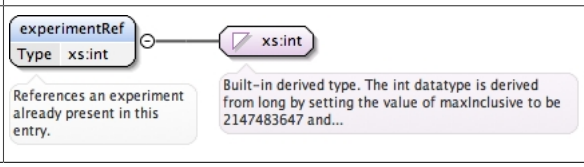
Element mif:interaction / mif:experimentList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentList
Properties	content: complex
Model	mif:experimentRef | mif:experimentDescription
Children	mif:experimentDescription, mif:experimentRef

Instance	`<mif:experimentList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,1}</mif:experimentRef>`
	`  <mif:experimentDescription id="">{1,1}</mif:experimentDescription>`
	`</mif:experimentList>`

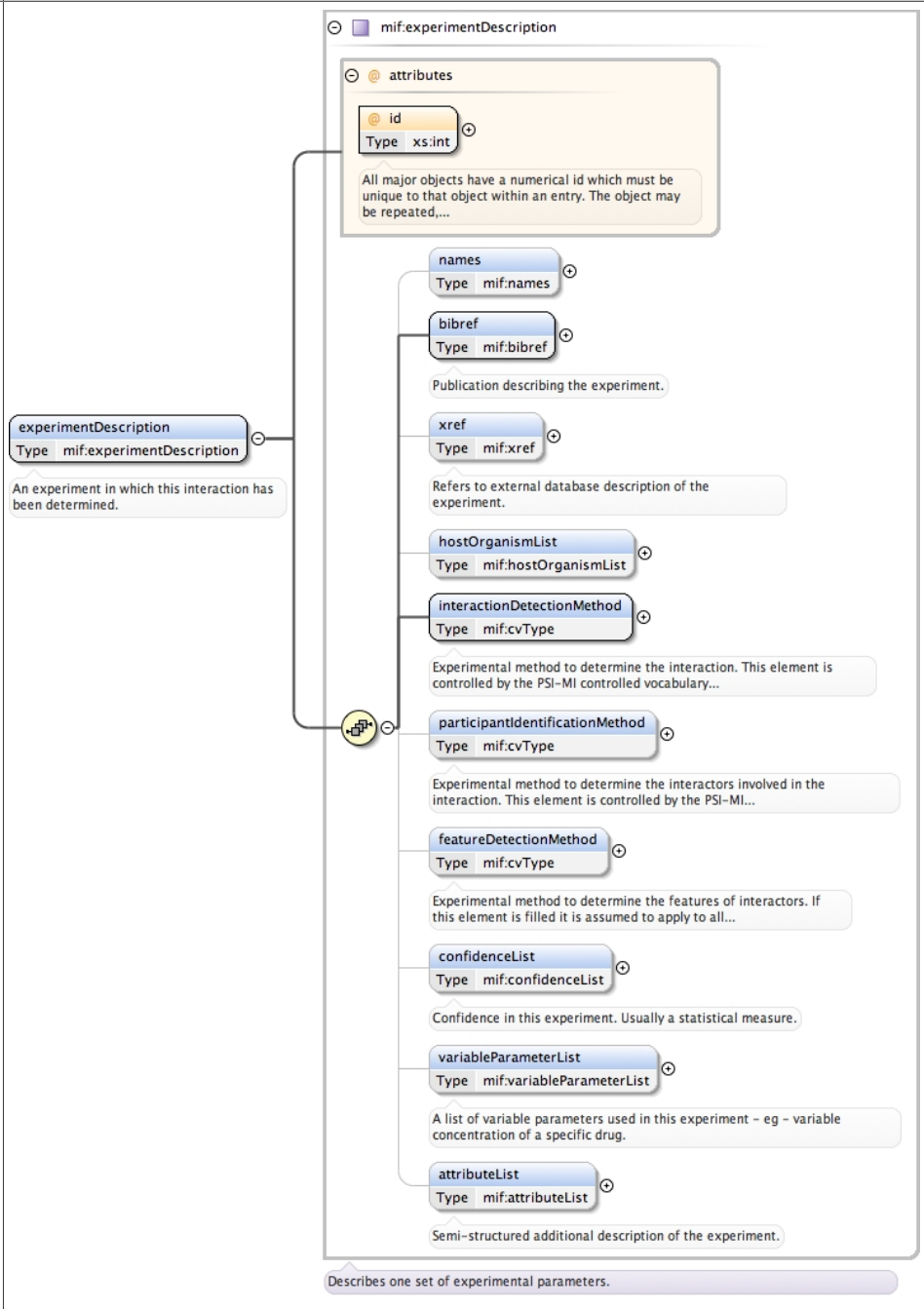
Source	`<xs:element name="experimentList" type="mif:experimentList"/>`

Element mif:experimentList / mif:experimentRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an experiment already present in this entry.
Diagram	

Type	xs:int
Properties	content: simple
Source	<xs:element name="experimentRef" type="xs:int"> <xs:annotation> <xs:documentation>References an experiment already present in this entry.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentList / mif:experimentDescription

Namespace	http://psi.hupo.org/mi/mif300
Annotations	An experiment in which this interaction has been determined.
Diagram	
Type	mif:experimentDescription
Properties	content: complex

Model	mif:names{0,1} , mif:bibref , mif:xref{0,1} , mif:hostOrganismList{0,1} , mif:interactionDetectionMethod , mif:participantIdentificationMethod{0,1} , mif:featureDetectionMethod{0,1} , mif:confidenceList{0,1} , mif:variableParameterList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bibref, mif:confidenceList, mif:featureDetectionMethod, mif:hostOrganismList, mif:interactionDetectionMethod, mif:names, mif:participantIdentificationMethod, mif:variableParameterList, mif:xref
Instance	<mif:experimentDescription id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{0,1}</mif:names> <mif:bibref>{1,1}</mif:bibref> <mif:xref>{0,1}</mif:xref> <mif:hostOrganismList>{0,1}</mif:hostOrganismList> <mif:interactionDetectionMethod>{1,1}</mif:interactionDetectionMethod> <mif:participantIdentificationMethod>{0,1}</mif:participantIdentificationMethod> <mif:featureDetectionMethod>{0,1}</mif:featureDetectionMethod> <mif:confidenceList>{0,1}</mif:confidenceList> <mif:variableParameterList>{0,1}</mif:variableParameterList> <mif:attributeList>{0,1}</mif:attributeList> </mif:experimentDescription>

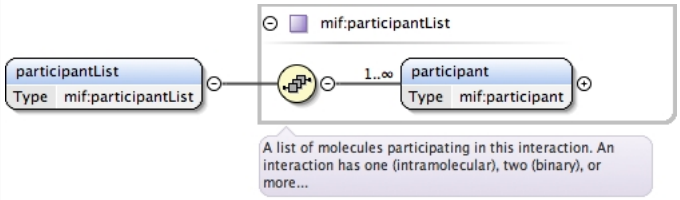
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which must be unique to that object within an entry. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:element name="experimentDescription" type="mif:experimentDescription">
  <xs:annotation>
    <xs:documentation>An experiment in which this interaction has been determined.</
xs:documentation>
  </xs:annotation>
</xs:element>
```

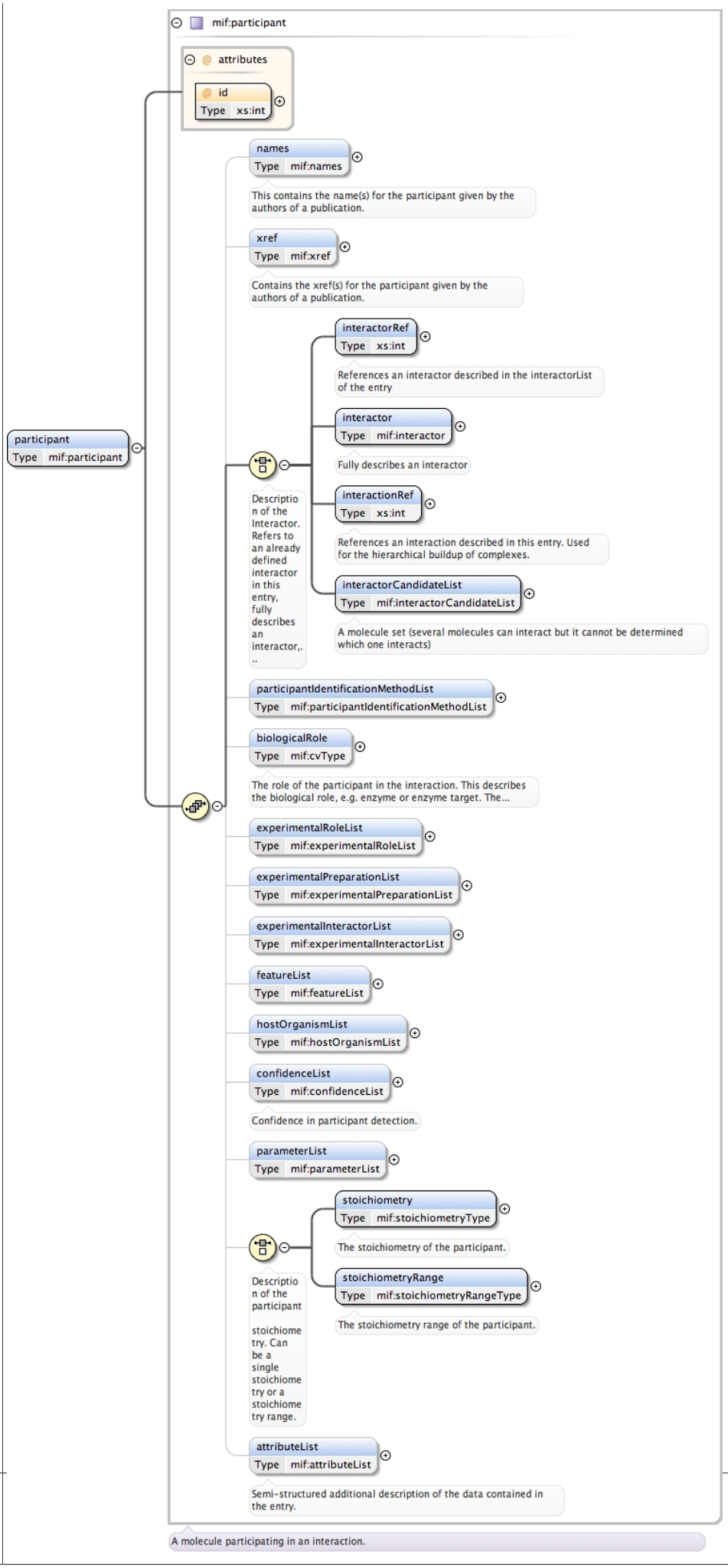
Element mif:interaction / mif:participantList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:participantList
Properties	content: complex
Model	mif:participant+
Children	mif:participant
Instance	<mif:participantList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participant id="">{1,unbounded}</mif:participant> </mif:participantList>
Source	<xs:element name="participantList" type="mif:participantList"/>

Element mif:participantList / mif:participant

Namespace	http://psi.hupo.org/mi/mif300

Diagram


participant
Type mif:participant
mif:participant
attributes
id
Type xs:int
names
Type mif:names
This contains the name(s) for the participant given by the authors of a publication.
xref
Type mif:xref
Contains the xref(s) for the participant given by the authors of a publication.
interactorRef
Type xs:int
References an interactor described in the interactorList of the entry
interactor
Type mif:interactor
Fully describes an interactor
interactionRef
Type xs:int
References an interaction described in this entry. Used for the hierarchical buildup of complexes.
interactorCandidateList
Type mif:interactorCandidateList
A molecule set (several molecules can interact but it cannot be determined which one interacts)
Description of the Interactor. Refers to an already defined interactor in this entry, fully describes an interactor,...
participantIdentificationMethodList
Type mif:participantIdentificationMethodList
biologicalRole
Type mif:cvType
The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The...
experimentalRoleList
Type mif:experimentalRoleList
experimentalPreparationList
Type mif:experimentalPreparationList
experimentalInteractorList
Type mif:experimentalInteractorList
featureList
Type mif:featureList
hostOrganismList
Type mif:hostOrganismList
confidenceList
Type mif:confidenceList
Confidence in participant detection.
parameterList
Type mif:parameterList
stoichiometry
Type mif:stoichiometryType
The stoichiometry of the participant.
stoichiometryRange
Type mif:stoichiometryRangeType
The stoichiometry range of the participant.
Description of the participant stoichiometry. Can be a single stoichiometry or a stoichiometry range.
attributeList
Type mif:attributeList
Semi-structured additional description of the data contained in the entry.
A molecule participating in an interaction.

Type	mif:participant
Properties	content: complex maxOccurs: unbounded
Model	mif:names{0,1} , mif:xref{0,1} , (mif:interactorRef | mif:interactor | mif:interactionRef | mif:interactorCandidateList) , mif:participantIdentificationMethodList{0,1} , mif:biologicalRole{0,1} , mif:experimentalRoleList{0,1} , mif:experimentalPreparationList{0,1} , mif:experimentalInteractorList{0,1} , mif:featureList{0,1} , mif:hostOrganismList{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , (mif:stoichiometry | mif:stoichiometryRange) , mif:attributeList{0,1}
Children	mif:attributeList, mif:biologicalRole, mif:confidenceList, mif:experimentalInteractorList, mif:experimentalPreparationList, mif:experimentalRoleList, mif:featureList, mif:hostOrganismList, mif:interactionRef, mif:interactor, mif:interactorCandidateList, mif:interactorRef, mif:names, mif:parameterList, mif:participantIdentificationMethodList, mif:stoichiometry, mif:stoichiometryRange, mif:xref

Instance

```
<mif:participant id="" xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:names>{0,1}</mif:names>
  <mif:xref>{0,1}</mif:xref>
  <mif:interactorRef>{1,1}</mif:interactorRef>
  <mif:interactor id="">{1,1}</mif:interactor>
  <mif:interactionRef>{1,1}</mif:interactionRef>
  <mif:interactorCandidateList>{1,1}</mif:interactorCandidateList>
  <mif:participantIdentificationMethodList>{0,1}</mif:participantIdentificationMethodList>
  <mif:biologicalRole>{0,1}</mif:biologicalRole>
  <mif:experimentalRoleList>{0,1}</mif:experimentalRoleList>
  <mif:experimentalPreparationList>{0,1}</mif:experimentalPreparationList>
  <mif:experimentalInteractorList>{0,1}</mif:experimentalInteractorList>
  <mif:featureList>{0,1}</mif:featureList>
  <mif:hostOrganismList>{0,1}</mif:hostOrganismList>
  <mif:confidenceList>{0,1}</mif:confidenceList>
  <mif:parameterList>{0,1}</mif:parameterList>
  <mif:stoichiometry value="">{1,1}</mif:stoichiometry>
  <mif:stoichiometryRange maxValue="" minValue="">{1,1}</mif:stoichiometryRange>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:participant>
```

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

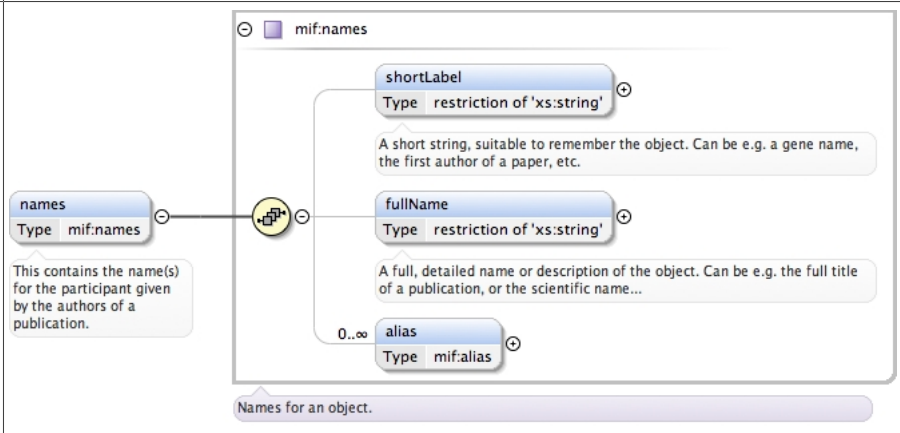
Source

```
<xs:element name="participant" type="mif:participant" maxOccurs="unbounded"/>
```

Element mif:participant / mif:names

Namespace	http://psi.hupo.org/mi/mif300
Annotations	This contains the name(s) for the participant given by the authors of a publication.

Diagram



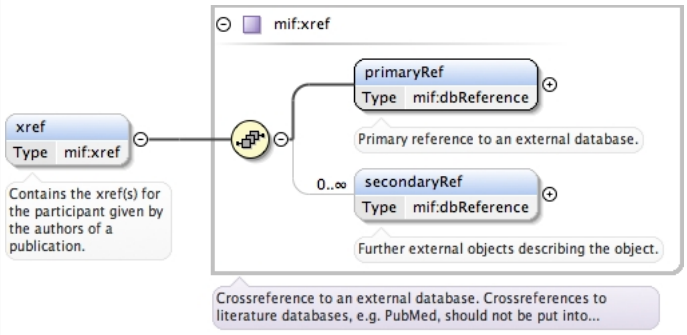
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance

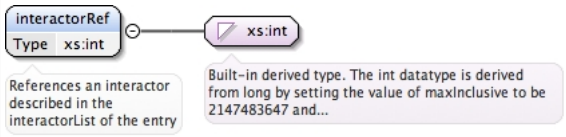
```
<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:shortLabel>{0,1}</mif:shortLabel>
  <mif:fullName>{0,1}</mif:fullName>
  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>
</mif:names>
```

Source	<xs:element name="names" type="mif:names" minOccurs="0"> <xs:annotation> <xs:documentation>This contains the name(s) for the participant given by the authors of a publication.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:xref

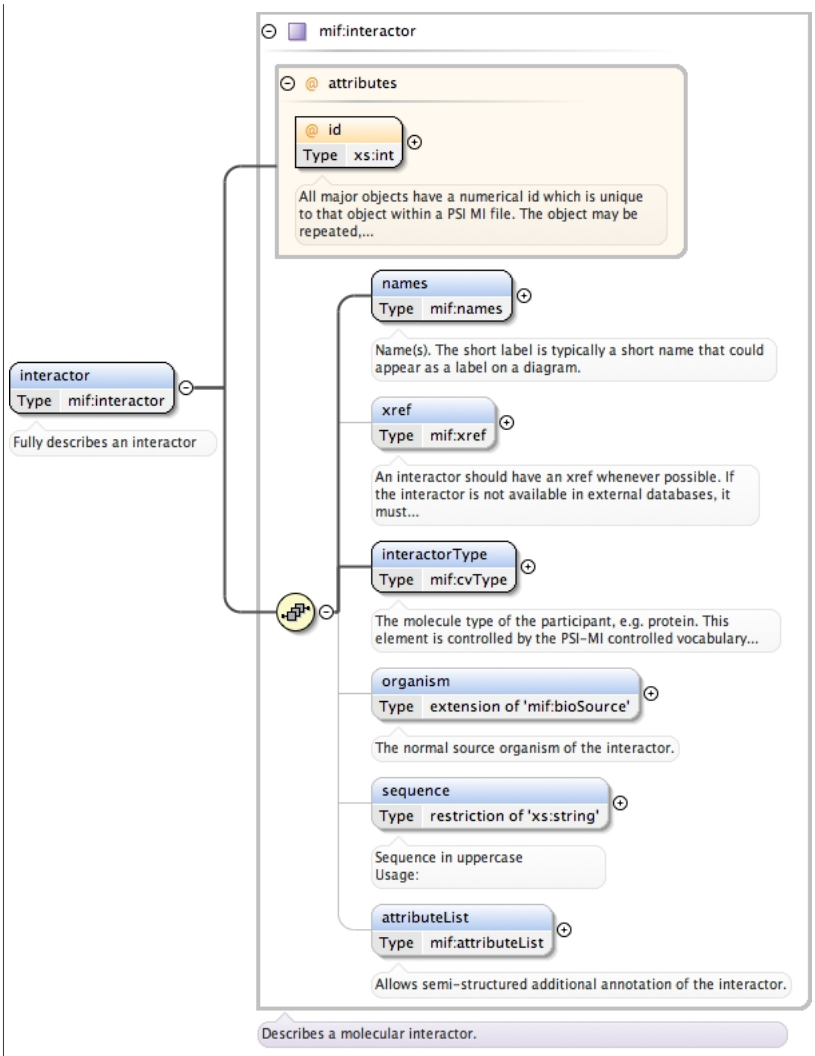
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Contains the xref(s) for the participant given by the authors of a publication.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Contains the xref(s) for the participant given by the authors of a publication.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:interactorRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an interactor described in the interactorList of the entry
Diagram	
Type	xs:int
Properties	content: simple
Source	<xs:element name="interactorRef" type="xs:int"> <xs:annotation> <xs:documentation>References an interactor described in the interactorList of the entry</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:interactor

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Fully describes an interactor

Diagram	
Type	mif:interactor
Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref
Instance	<mif:interactor id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:interactorType>{1,1}</mif:interactorType> <mif:organism ncbiTaxId="">{0,1}</mif:organism> <mif:sequence>{0,1}</mif:sequence> <mif:attributeList>{0,1}</mif:attributeList> </mif:interactor>

Attributes

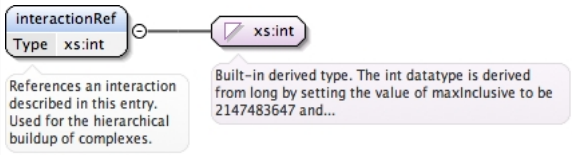
QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:element name="interactor" type="mif:interactor">
  <xs:annotation>
    <xs:documentation>Fully describes an interactor</xs:documentation>
  </xs:annotation>
</xs:element>
```

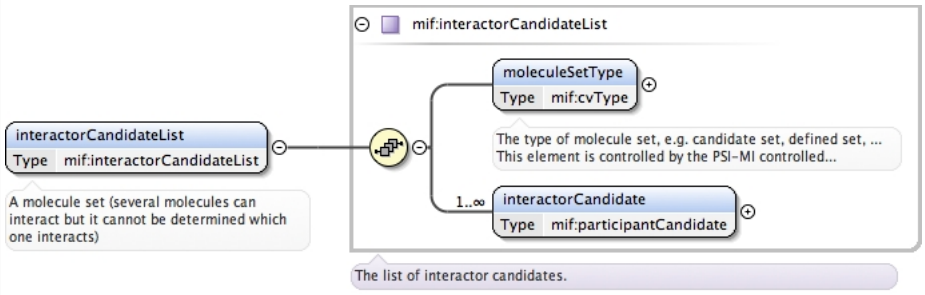
Element mif:participant / mif:interactionRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an interaction described in this entry. Used for the hierarchical buildup of complexes.

Diagram	
Type	xs:int
Properties	content: simple

Source	`<xs:element name="interactionRef" type="xs:int">`
	`  <xs:annotation>`
	`  <xs:documentation>References an interaction described in this entry. Used for the hierarchical buildup of complexes.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

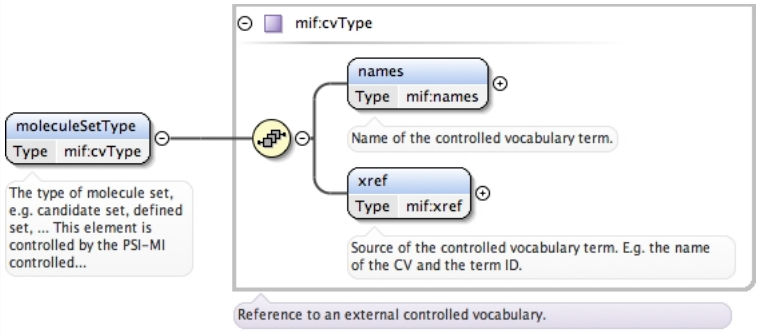
Element mif:participant / mif:interactorCandidateList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecule set (several molecules can interact but it cannot be determined which one interacts)
Diagram	
Type	mif:interactorCandidateList
Properties	content: complex
Model	mif:moleculeSetType , mif:interactorCandidate+
Children	mif:interactorCandidate, mif:moleculeSetType

Instance	`<mif:interactorCandidateList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:moleculeSetType>{1,1}</mif:moleculeSetType>`
	`  <mif:interactorCandidate id="">{1,unbounded}</mif:interactorCandidate>`
	`</mif:interactorCandidateList>`

Source	`<xs:element name="interactorCandidateList" type="mif:interactorCandidateList">`
	`  <xs:annotation>`
	`  <xs:documentation>A molecule set (several molecules can interact but it cannot be determined which one interacts)</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:interactorCandidateList / mif:moleculeSetType

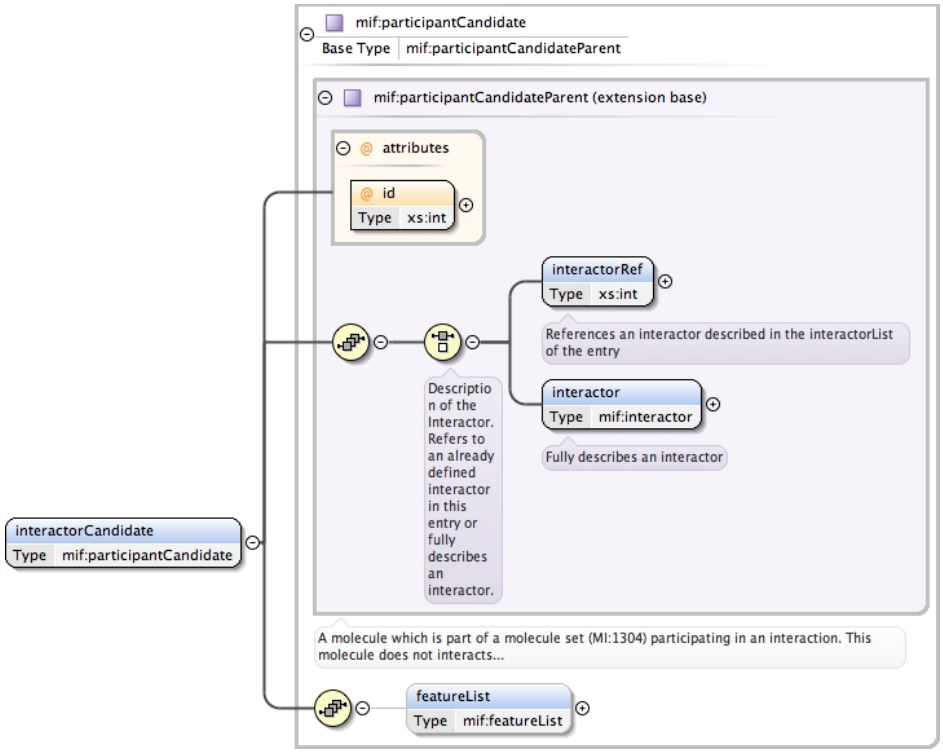
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.
Diagram	
Type	mif:cvType

Properties	content: complex minOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:moleculeSetType xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:moleculeSetType>`

Source	`<xs:element name="moleculeSetType" type="mif:cvType" minOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:interactorCandidateList / mif:interactorCandidate`

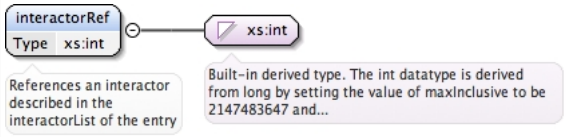
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:participantCandidate
Type hierarchy	• mif:participantCandidateParent • mif:participantCandidate
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	(mif:interactorRef | mif:interactor) , mif:featureList{0,1}
Children	mif:featureList, mif:interactor, mif:interactorRef

Instance	`<mif:interactorCandidate id="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:interactorRef>{1,1}</mif:interactorRef>`
	`  <mif:interactor id="">{1,1}</mif:interactor>`
	`  <mif:featureList>{0,1}</mif:featureList>`
	`</mif:interactorCandidate>`

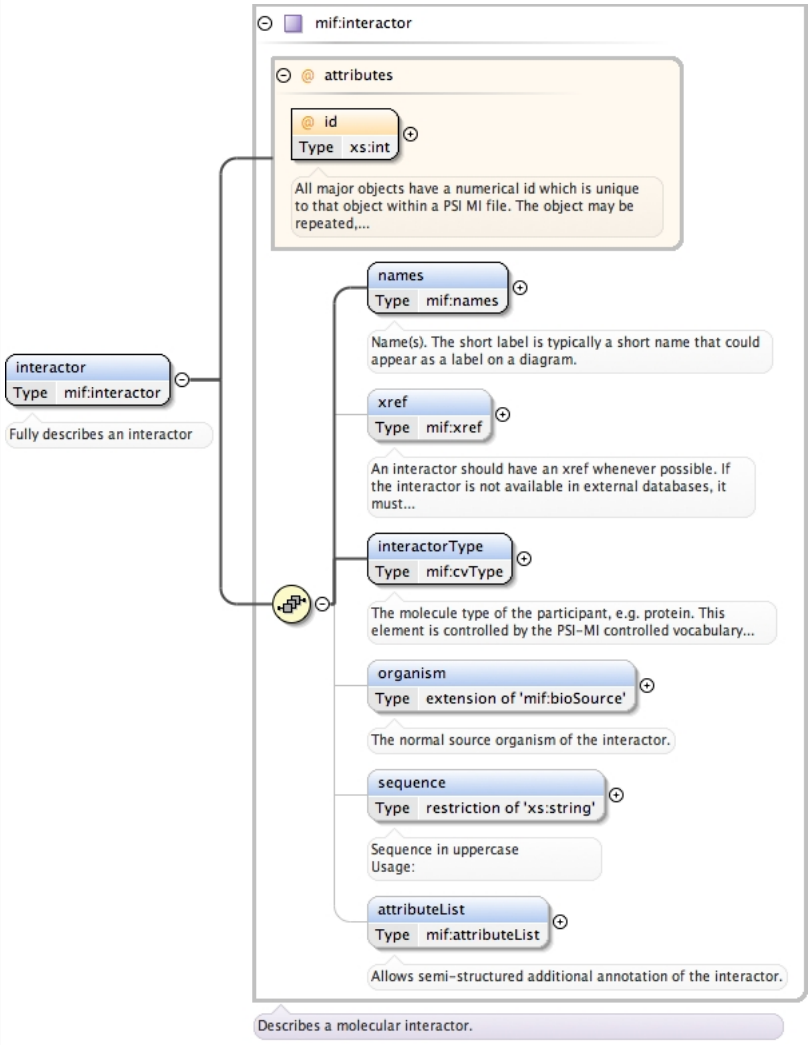
Attributes	QName	Type	Fixed	Default	Use
	id	xs:int			required

Source	<xs:element name="interactorCandidate" type="mif:participantCandidate" maxOccurs="unbounded" minOccurs="1"/>

Element mif:participantCandidateParent / mif:interactorRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an interactor described in the interactorList of the entry
Diagram	
Type	xs:int
Properties	content: simple
Source	<xs:element name="interactorRef" type="xs:int"> <xs:annotation> <xs:documentation>References an interactor described in the interactorList of the entry</xs:documentation> </xs:annotation> </xs:element>

Element mif:participantCandidateParent / mif:interactor

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Fully describes an interactor
Diagram	
Type	mif:interactor

Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref
Instance	<mif:interactor id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:interactorType>{1,1}</mif:interactorType> <mif:organism ncbiTaxId="">{0,1}</mif:organism> <mif:sequence>{0,1}</mif:sequence> <mif:attributeList>{0,1}</mif:attributeList> </mif:interactor>

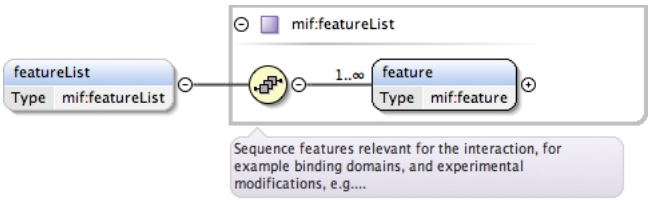
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

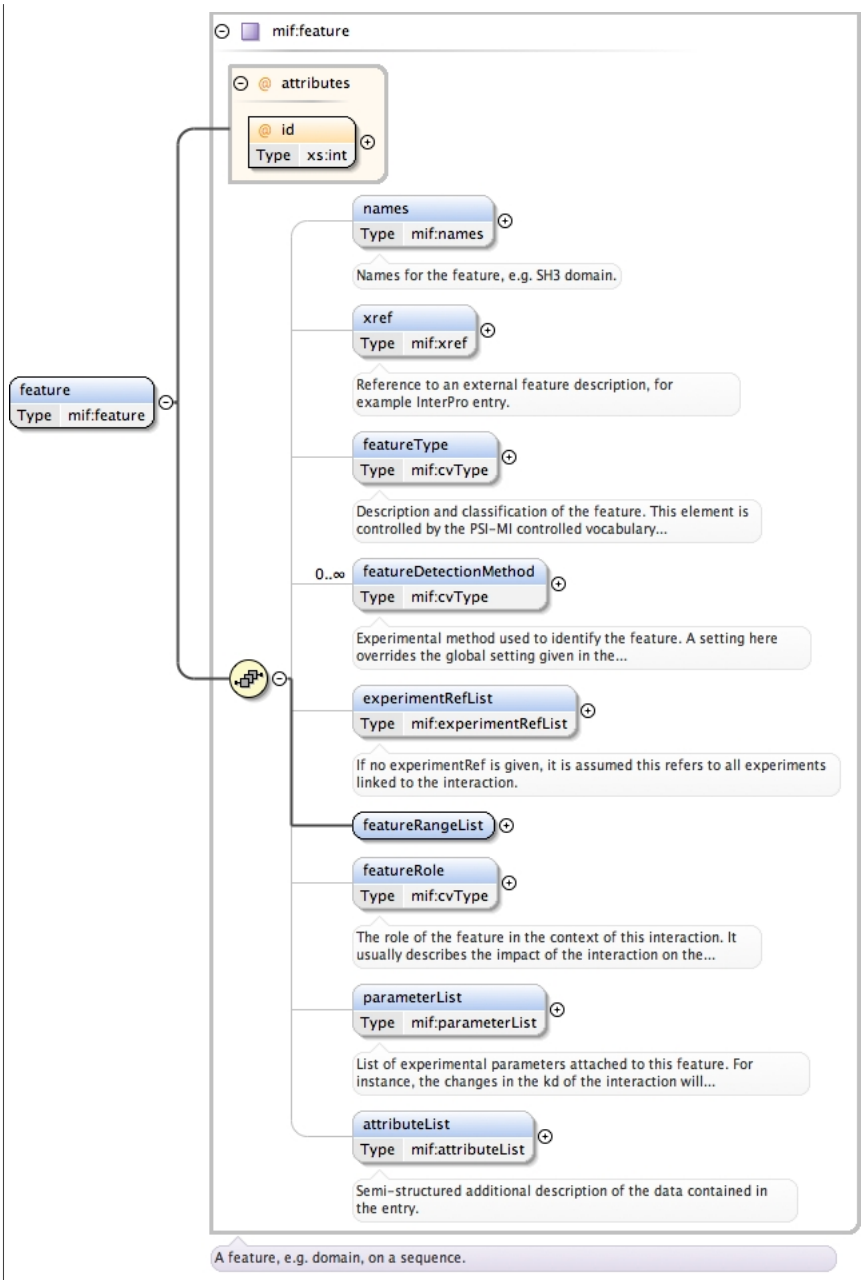
```
<xs:element name="interactor" type="mif:interactor">
  <xs:annotation>
    <xs:documentation>Fully describes an interactor</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element mif:participantCandidate / mif:featureList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:featureList
Properties	content: complex minOccurs: 0
Model	mif:feature+
Children	mif:feature
Instance	<mif:featureList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:feature id="">{1,unbounded}</mif:feature> </mif:featureList>
Source	<xs:element name="featureList" type="mif:featureList" minOccurs="0"/>

Element mif:featureList / mif:feature

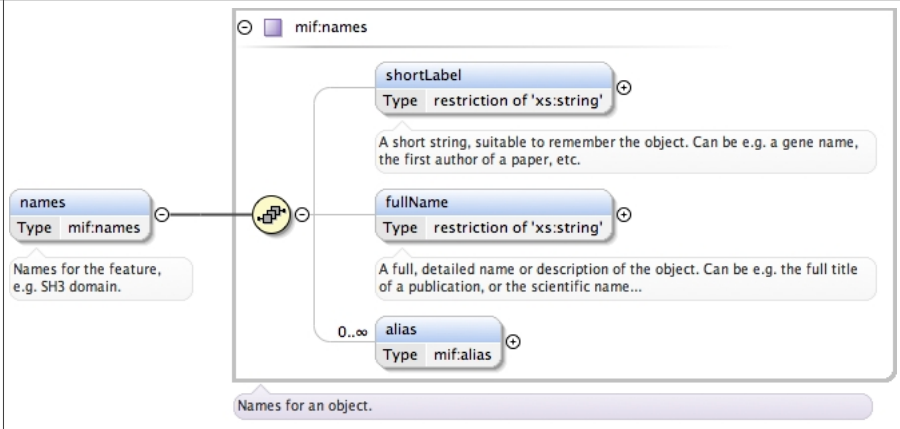
Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:feature
Properties	content: complex maxOccurs: unbounded
Model	mif:names{0,1} , mif:xref{0,1} , mif:featureType{0,1} , mif:featureDetectionMethod* , mif:experimentRefList{0,1} , mif:featureRangeList , mif:featureRole{0,1} , mif:parameterList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:experimentRefList, mif:featureDetectionMethod, mif:featureRangeList, mif:featureRole, mif:featureType, mif:names, mif:parameterList, mif:xref

Instance	`<mif:feature id="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{0,1}</mif:names>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:featureType>{0,1}</mif:featureType>`
	`  <mif:featureDetectionMethod>{0,unbounded}</mif:featureDetectionMethod>`
	`  <mif:experimentRefList>{0,1}</mif:experimentRefList>`
	`  <mif:featureRangeList>{1,1}</mif:featureRangeList>`
	`  <mif:featureRole>{0,1}</mif:featureRole>`
	`  <mif:parameterList>{0,1}</mif:parameterList>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`</mif:feature>`

Attributes	QName	Type	Fixed	Default	Use
	id	xs:int			required
Source	`<xs:element name="feature" type="mif:feature" maxOccurs="unbounded"/>`				

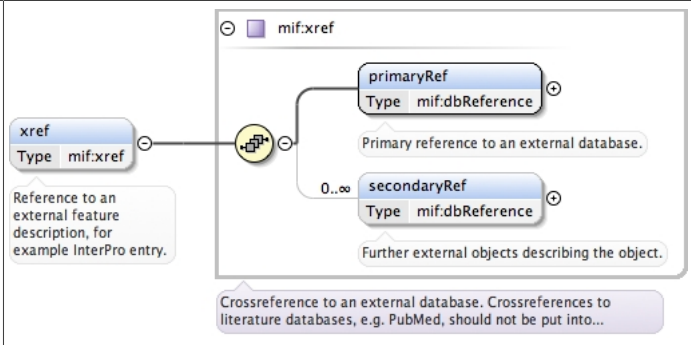
Element `mif:feature / mif:names`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Names for the feature, e.g. SH3 domain.`
Diagram	
Type	mif:names
Properties	content: `complex` minOccurs: `0`
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

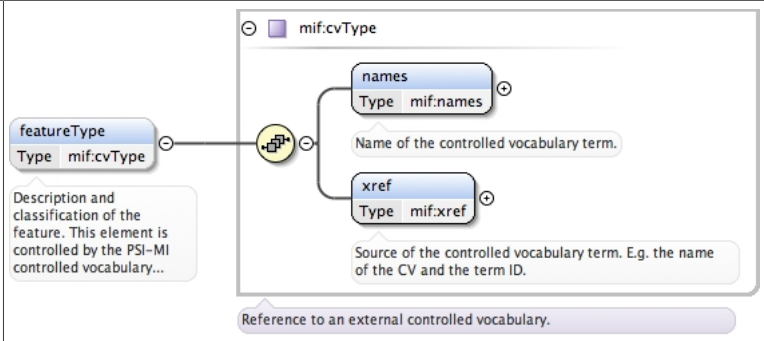
Source	`<xs:element name="names" type="mif:names" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Names for the feature, e.g. SH3 domain.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:feature / mif:xref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Reference to an external feature description, for example InterPro entry.`
Diagram	
Type	mif:xref
Properties	content: `complex` minOccurs: `0`
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef

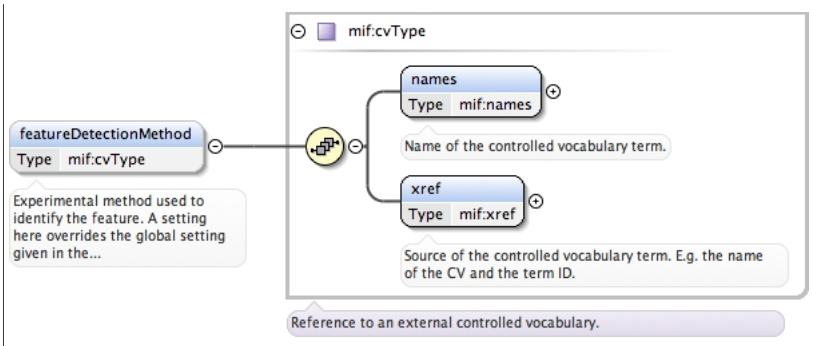
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Reference to an external feature description, for example InterPro entry.</xs:documentation> </xs:annotation> </xs:element>

Element mif:feature / mif:featureType

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Description and classification of the feature. This element is controlled by the PSI-MI controlled vocabulary "feature", root term id MI:0116.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:featureType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:featureType>
Source	<xs:element name="featureType" type="mif:cvType" maxOccurs="1" minOccurs="0"> <xs:annotation> <xs:documentation>Description and classification of the feature. This element is controlled by the PSI-MI controlled vocabulary "feature", root term id MI:0116.</xs:documentation> </xs:annotation> </xs:element>

Element mif:feature / mif:featureDetectionMethod

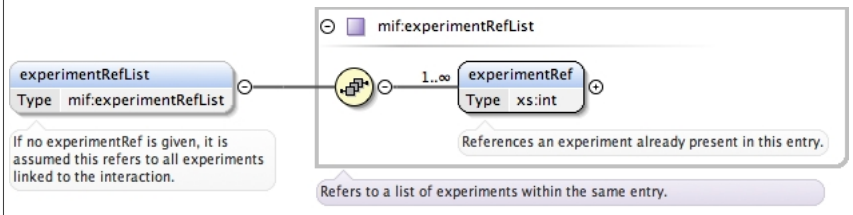
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Experimental method used to identify the feature. A setting here overrides the global setting given in the experimentDescription. External controlled vocabulary.

Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:featureDetectionMethod xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:featureDetectionMethod>`

Source	`<xs:element name="featureDetectionMethod" type="mif:cvType" maxOccurs="unbounded" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Experimental method used to identify the feature. A setting here overrides the global setting given in the experimentDescription. External controlled vocabulary.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:feature / mif:experimentRefList

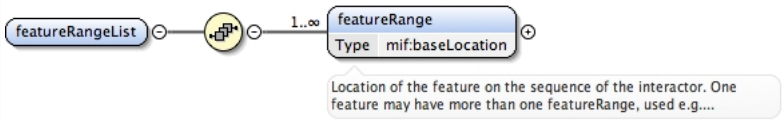
Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:feature / mif:featureRangeList

Namespace	http://psi.hupo.org/mi/mif300

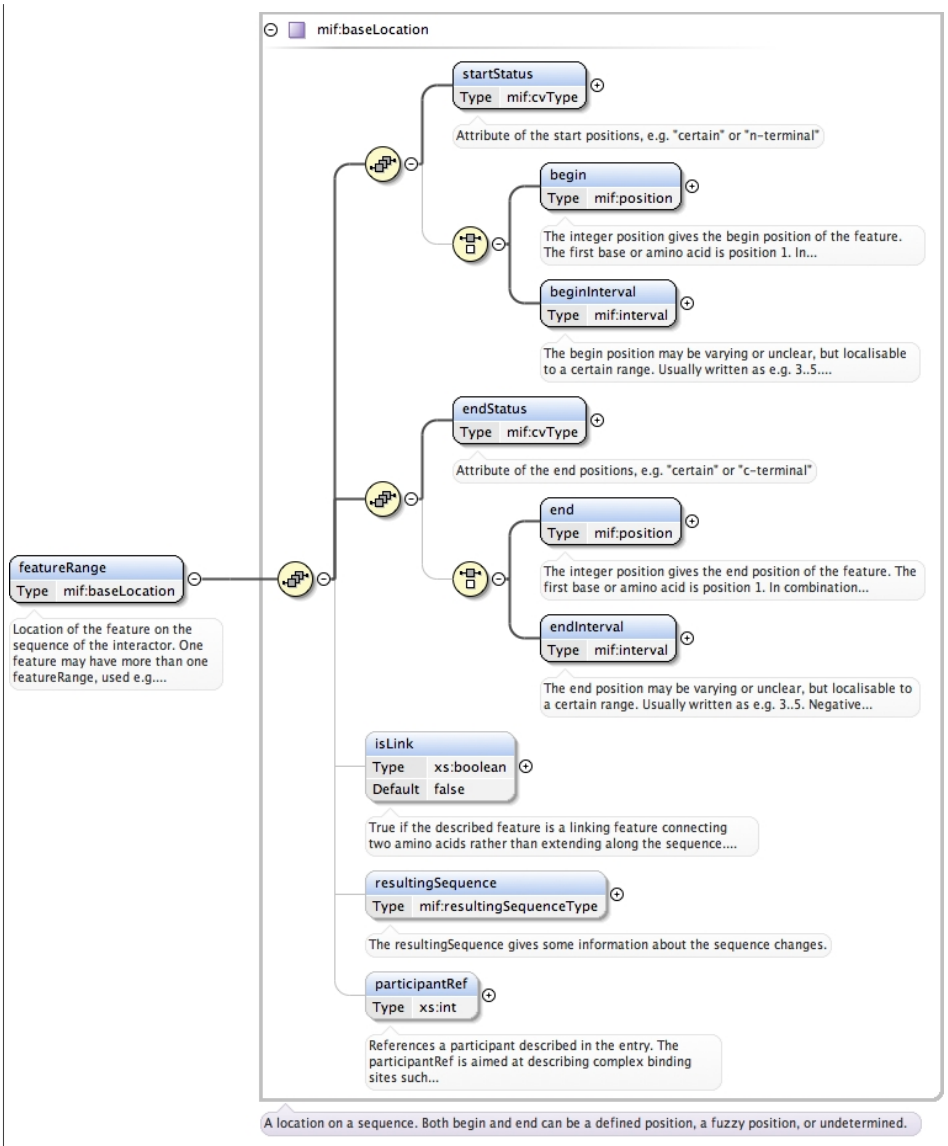
Diagram	
Properties	content: complex
Model	mif:featureRange+
Children	mif:featureRange

Instance	`<mif:featureRangeList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:featureRange>{1,unbounded}</mif:featureRange>`
	`</mif:featureRangeList>`

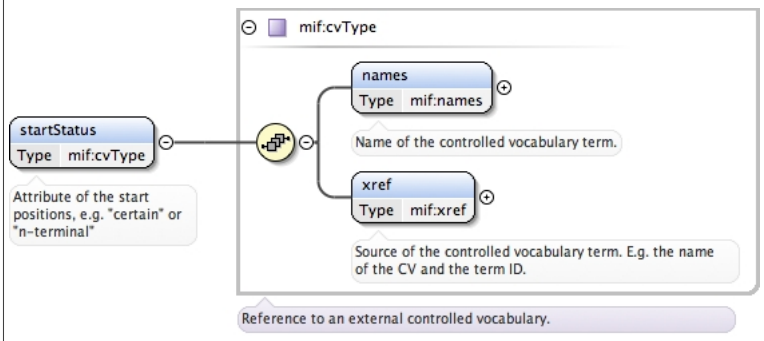
Source	`<xs:element name="featureRangeList">`
	`  <xs:complexType>`
	`  <xs:sequence>`
	`  <xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded">`
	`  <xs:annotation>`
	`  <xs:documentation>Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`  </xs:complexType>`
	`</xs:element>`

Element `mif:feature / mif:featureRangeList / mif:featureRange`

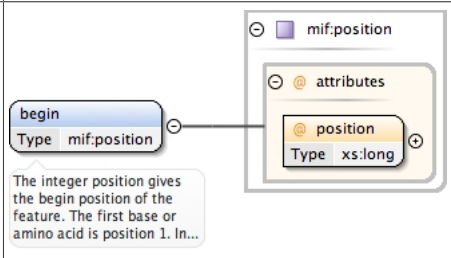
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.

Diagram	
Type	mif:baseLocation
Properties	content: complex maxOccurs: unbounded
Model	mif:startStatus , (mif:begin | mif:beginInterval) , mif:endStatus , (mif:end | mif:endInterval) , mif:isLink{0,1} , mif:resultingSequence{0,1} , mif:participantRef{0,1}
Children	mif:begin, mif:beginInterval, mif:end, mif:endInterval, mif:endStatus, mif:isLink, mif:participantRef, mif:resultingSequence, mif:startStatus
Instance	<mif:featureRange xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:startStatus>{1,1}</mif:startStatus> <mif:begin position="">{1,1}</mif:begin> <mif:beginInterval begin="" end="">{1,1}</mif:beginInterval> <mif:endStatus>{1,1}</mif:endStatus> <mif:end position="">{1,1}</mif:end> <mif:endInterval begin="" end="">{1,1}</mif:endInterval> <mif:isLink>{0,1}</mif:isLink> <mif:resultingSequence>{0,1}</mif:resultingSequence> <mif:participantRef>{0,1}</mif:participantRef> </mif:featureRange>
Source	<xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.</xs:documentation> </xs:annotation> </xs:element>

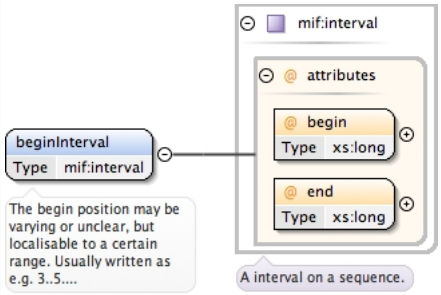
Element mif:baseLocation / mif:startStatus

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Attribute of the start positions, e.g. "certain" or "n-terminal"
Diagram	
Type	mif:cvType
Properties	content: complex
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:startStatus xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:startStatus>
Source	<xs:element name="startStatus" type="mif:cvType"> <xs:annotation> <xs:documentation>Attribute of the start positions, e.g. "certain" or "n-terminal"</xs:documentation> </xs:annotation> </xs:element>

Element mif:baseLocation / mif:begin

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The integer position gives the begin position of the feature. The first base or amino acid is position 1. In combination with the numeric value, the attribute 'status' allows to express fuzzy positions, e.g. 'less than 4'. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins
Diagram	
Type	mif:position
Properties	content: complex
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **position** / xs:long / / / required
Source	<xs:element name="begin" type="mif:position"> <xs:annotation> <xs:documentation>The integer position gives the begin position of the feature. The first base or amino acid is position 1. In combination with the numeric value, the attribute 'status' allows to express fuzzy positions, e.g. 'less than 4'. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins</xs:documentation> </xs:annotation> </xs:element>

Element mif:baseLocation / mif:beginInterval

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The begin position may be varying or unclear, but localisable to a certain range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins
Diagram	
Type	mif:interval
Properties	content: complex

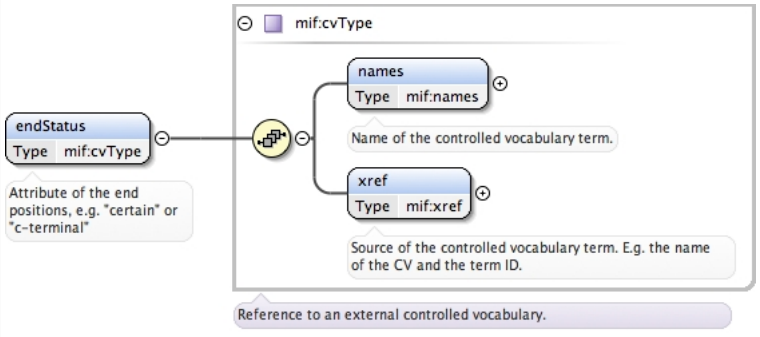
Attributes

QName	Type	Fixed	Default	Use
begin	xs:long			required
end	xs:long			required

Source

```
<xs:element name="beginInterval" type="mif:interval">
  <xs:annotation>
    <xs:documentation>The begin position may be varying or unclear, but localisable to a certain
 range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter regions
 when the interactor is a gene but should not be allowed for proteins</xs:documentation>
  </xs:annotation>
</xs:element>
```

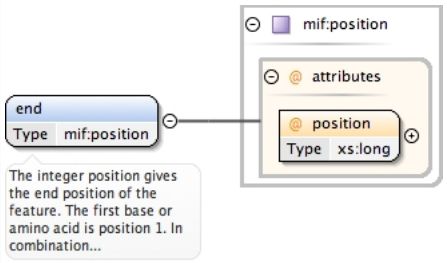
Element mif:baseLocation / mif:endStatus

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Attribute of the end positions, e.g. "certain" or "c-terminal"
Diagram	
Type	mif:cvType
Properties	content: complex
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:endStatus xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:endStatus>

Source

```
<xs:element name="endStatus" type="mif:cvType">
  <xs:annotation>
    <xs:documentation>Attribute of the end positions, e.g. "certain" or "c-terminal"</
xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:baseLocation / mif:end`

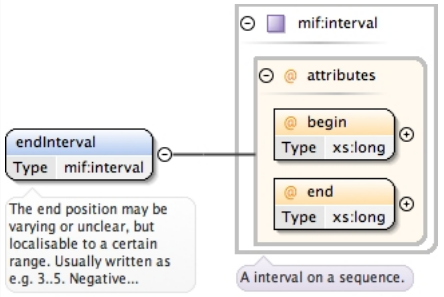
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The integer position gives the end position of the feature. The first base or amino acid is position 1. In combination with the numeric value, the attribute 'status' allows to express fuzzy positions, e.g. 'more than 400'. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins
Diagram	
Type	mif:position
Properties	content: complex

Attributes	QName	Type	Fixed	Default	Use
	position	xs:long			required

Source

```
<xs:element name="end" type="mif:position">
  <xs:annotation>
    <xs:documentation>The integer position gives the end position of the feature. The first base or
 amino acid is position 1. In combination with the numeric value, the attribute 'status' allows to
 express fuzzy positions, e.g. 'more than 400'. Negative positions can be used to describe promoter
 regions when the interactor is a gene but should not be allowed for proteins</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:baseLocation / mif:endInterval`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The end position may be varying or unclear, but localisable to a certain range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins
Diagram	
Type	mif:interval
Properties	content: complex

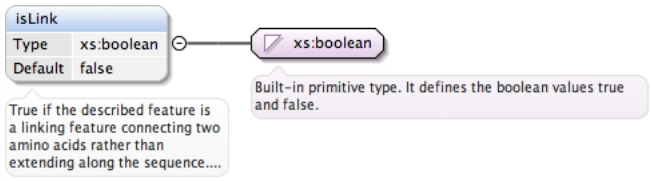
Attributes	QName	Type	Fixed	Default	Use
	begin	xs:long			required
	end	xs:long			required

Source

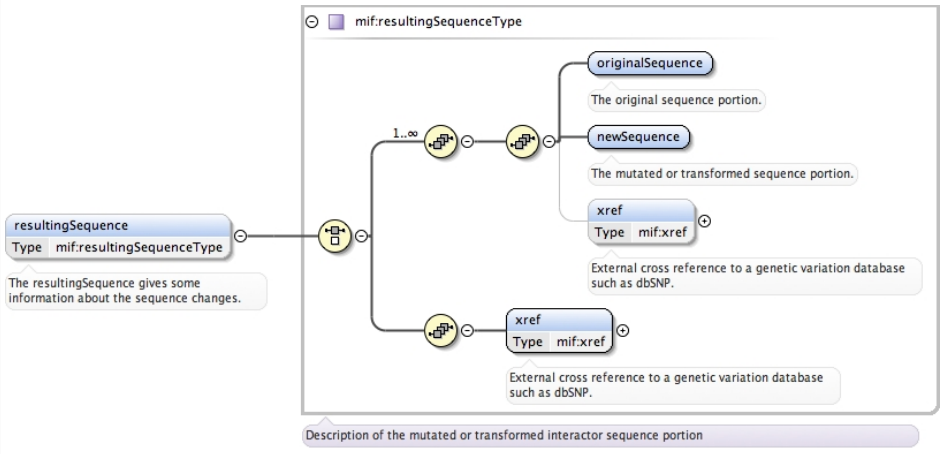
```
<xs:element name="endInterval" type="mif:interval">
  <xs:annotation>
    <xs:documentation>The end position may be varying or unclear, but localisable to a certain
 range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter regions
 when the interactor is a gene but should not be allowed for proteins</xs:documentation>
  </xs:annotation>
```

```
</xs:element>
```

Element `mif:baseLocation / mif:isLink`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`True if the described feature is a linking feature connecting two amino acids rather than extending along the sequence. 'begin' references the first amino acid, 'end' the second. Standard example is a disulfide bridge. Does not reference another feature, therefore is only suitable for linking features on the same amino acid chain.`
Diagram	
Type	xs:boolean
Properties	content: `simple` minOccurs: `0` default: `false`
Source	`<xs:element name="isLink" type="xs:boolean" default="false" minOccurs="0">` `  <xs:annotation>` ` <xs:documentation>True if the described feature is a linking feature connecting two amino acids rather than extending along the sequence. 'begin' references the first amino acid, 'end' the second. Standard example is a disulfide bridge. Does not reference another feature, therefore is only suitable for linking features on the same amino acid chain.</xs:documentation>` ` </xs:annotation>` `</xs:element>`

Element `mif:baseLocation / mif:resultingSequence`

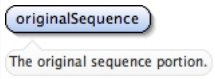
Namespace	http://psi.hupo.org/mi/mif300
Annotations	`The resultingSequence gives some information about the sequence changes.`
Diagram	
Type	mif:resultingSequenceType
Properties	content: `complex` minOccurs: `0` maxOccurs: `1`
Model	(mif:originalSequence , mif:newSequence , mif:xref{0,1}) | (mif:xref)
Children	mif:newSequence, mif:originalSequence, mif:xref

Instance	`<mif:resultingSequence xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:originalSequence>{1,1}</mif:originalSequence>`
	`  <mif:newSequence>{1,1}</mif:newSequence>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:xref>{1,1}</mif:xref>`

	`</mif:resultingSequence>`

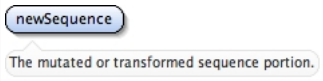
Source	`<xs:element name="resultingSequence" type="mif:resultingSequenceType" minOccurs="0" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>The resultingSequence gives some information about the sequence changes.</`
	`xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:resultingSequenceType / mif:originalSequence`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The original sequence portion.
Diagram	
Properties	minOccurs: 1 maxOccurs: 1

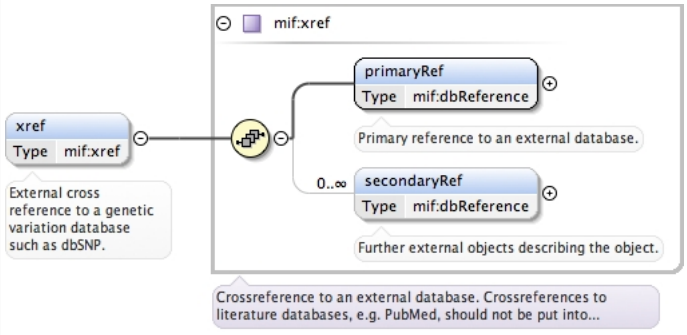
Source	`<xs:element name="originalSequence" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>The original sequence portion.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:resultingSequenceType / mif:newSequence`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The mutated or transformed sequence portion.
Diagram	
Properties	minOccurs: 1 maxOccurs: 1

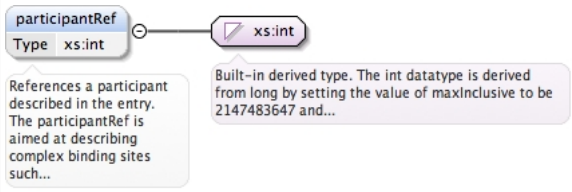
Source	`<xs:element name="newSequence" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>The mutated or transformed sequence portion.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:resultingSequenceType / mif:xref`

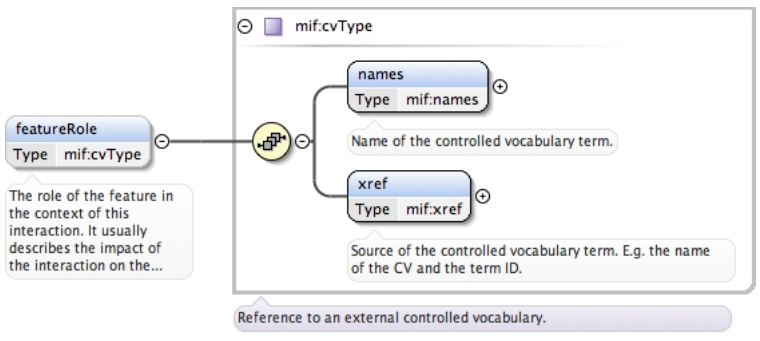
Namespace	http://psi.hupo.org/mi/mif300
Annotations	External cross reference to a genetic variation database such as dbSNP.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef

Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>External cross reference to a genetic variation database such as dbSNP.</xs:documentation> </xs:annotation> </xs:element>

Element mif:baseLocation / mif:participantRef

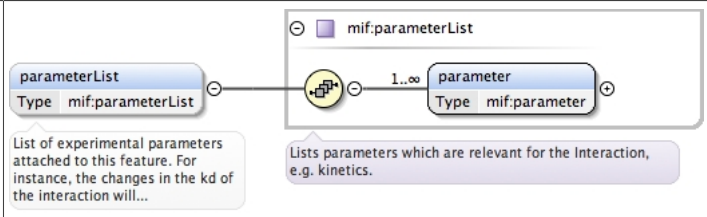
Namespace	http://psi.hupo.org/mi/mif300
Annotations	References a participant described in the entry. The participantRef is aimed at describing complex binding sites such as composite binding sites where the participant is an interaction and the binding site ranges has to specify which participant in the subunit it refers to.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 0 maxOccurs: 1
Source	<xs:element name="participantRef" type="xs:int" minOccurs="0" maxOccurs="1"> <xs:annotation> <xs:documentation>References a participant described in the entry. The participantRef is aimed at describing complex binding sites such as composite binding sites where the participant is an interaction and the binding site ranges has to specify which participant in the subunit it refers to.</xs:documentation> </xs:annotation> </xs:element>

Element mif:feature / mif:featureRole

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The role of the feature in the context of this interaction. It usually describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of the feature on the interaction. (Ex: prerequisite-ptm,...).
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1

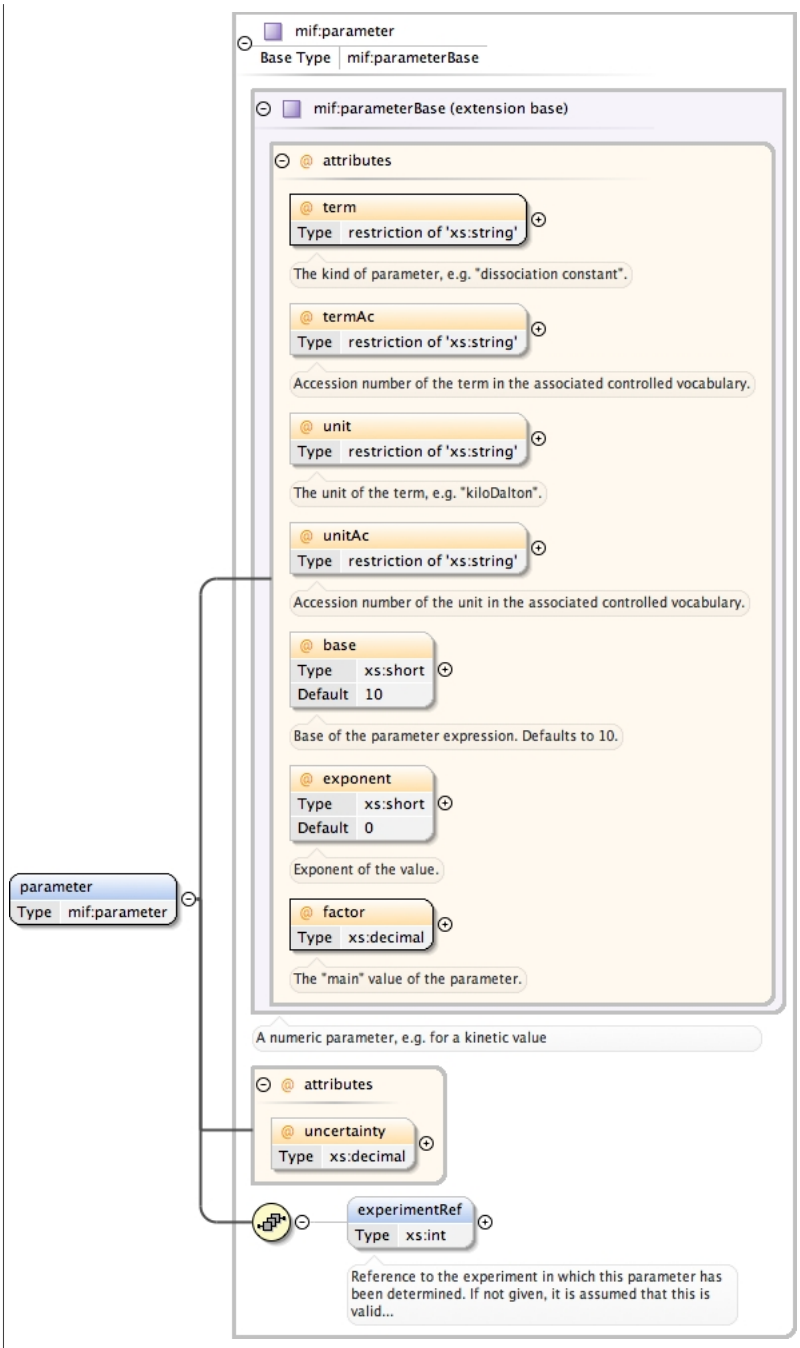
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:featureRole xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:featureRole>
Source	<xs:element name="featureRole" type="mif:cvType" minOccurs="0" maxOccurs="1"> <xs:annotation> <xs:documentation>The role of the feature in the context of this interaction. It usually describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of the feature on the interaction. (Ex: prerequisite-ptm,...).</xs:documentation> </xs:annotation> </xs:element>

Element mif:feature / mif:parameterList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of experimental parameters attached to this feature. For instance, the changes in the kd of the interaction will be added at the feature level with the description of the mutation
Diagram	
Type	mif:parameterList
Properties	content: complex minOccurs: 0
Model	mif:parameter+
Children	mif:parameter
Instance	<mif:parameterList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="">{1,unbounded} mif:parameter> </mif:parameterList>
Source	<xs:element name="parameterList" type="mif:parameterList" minOccurs="0"> <xs:annotation> <xs:documentation>List of experimental parameters attached to this feature. For instance, the changes in the kd of the interaction will be added at the feature level with the description of the mutation</xs:documentation> </xs:annotation> </xs:element>

Element mif:parameterList / mif:parameter

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:parameter
Type hierarchy	• mif:parameterBase • mif:parameter
Properties	content: complex maxOccurs: unbounded
Model	mif:experimentRef{0,1}
Children	mif:experimentRef

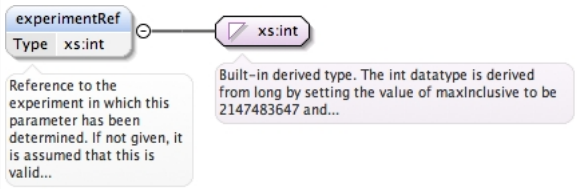
Instance	`<mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="" xmlns:mif="http psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{0,1}</mif:experimentRef>`
	`</mif:parameter>`

Attributes

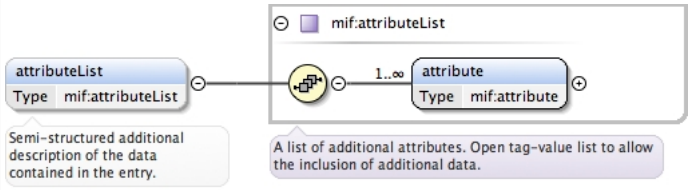
QName	Type	Fixed	Default	Use
base	xs:short		10	optional
	Base of the parameter expression. Defaults to 10.			

	QName	Type	Fixed	Default	Use
	exponent	xs:short		0	optional
		Exponent of the value.			
	factor	xs:decimal			required
		The "main" value of the parameter.			
	term	restriction of xs:string			required
		The kind of parameter, e.g. "dissociation constant".			
	termAc	restriction of xs:string			optional
		Accession number of the term in the associated controlled vocabulary.			
	uncertainty	xs:decimal			optional
	unit	restriction of xs:string			optional
		The unit of the term, e.g. "kiloDalton".			
	unitAc	restriction of xs:string			optional
		Accession number of the unit in the associated controlled vocabulary.			
Source	<xs:element name="parameter" type="mif:parameter" maxOccurs="unbounded"/>				

Element mif:parameter / mif:experimentRef

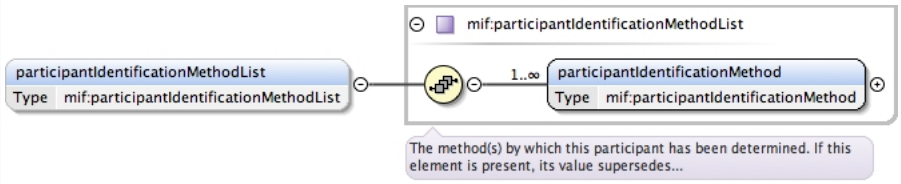
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Reference to the experiment in which this parameter has been determined. If not given, it is assumed that this is valid for all experiments attached to the interaction.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 0 maxOccurs: 1
Source	<xs:element name="experimentRef" type="xs:int" minOccurs="0" maxOccurs="1"> <xs:annotation> <xs:documentation>Reference to the experiment in which this parameter has been determined. If not given, it is assumed that this is valid for all experiments attached to the interaction.</xs:documentation> </xs:annotation> </xs:element>

Element mif:feature / mif:attributeList

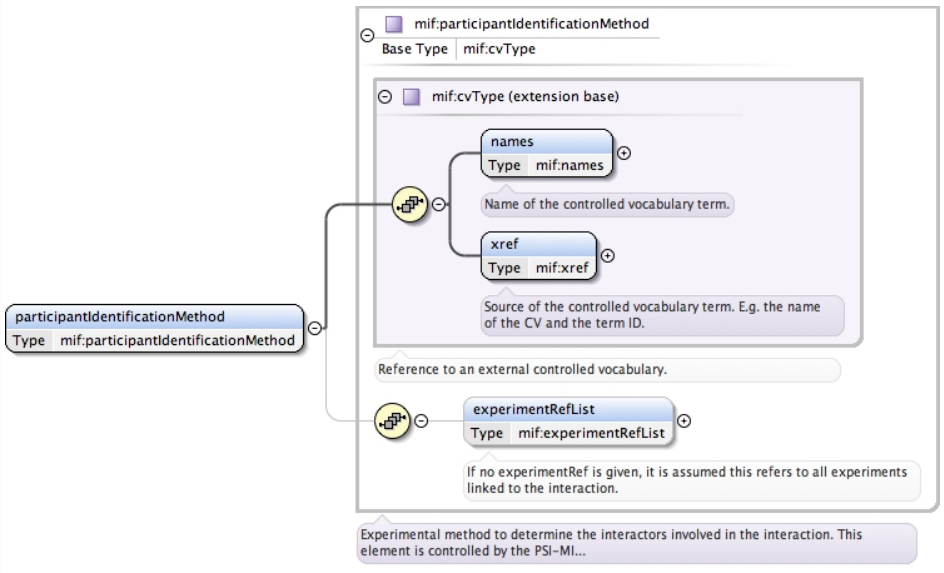
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Semi-structured additional description of the data contained in the entry.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+

Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>Semi-structured additional description of the data contained in the entry.</ xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:participantIdentificationMethodList

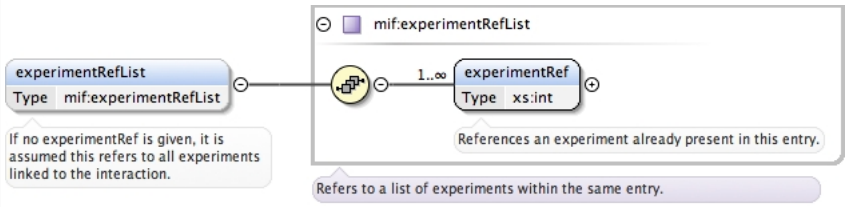
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:participantIdentificationMethodList
Properties	content: complex minOccurs: 0
Model	mif:participantIdentificationMethod+
Children	mif:participantIdentificationMethod
Instance	<mif:participantIdentificationMethodList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participantIdentificationMethod>{1,unbounded}</mif:participantIdentificationMethod> </mif:participantIdentificationMethodList>
Source	<xs:element name="participantIdentificationMethodList" type="mif:participantIdentificationMethodList" minOccurs="0"/>

Element mif:participantIdentificationMethodList / mif:participantIdentificationMethod

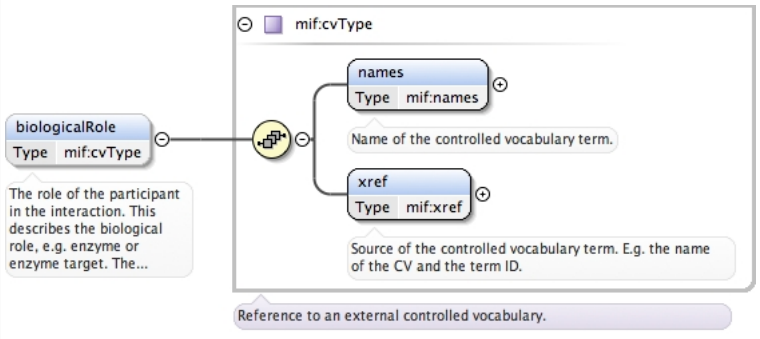
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:participantIdentificationMethod
Type hierarchy	• mif:cvType • mif:participantIdentificationMethod
Properties	content: complex maxOccurs: unbounded

Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref
Instance	<mif:participantIdentificationMethod xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> <mif:experimentRefList>{0,1}</mif:experimentRefList> </mif:participantIdentificationMethod>
Source	<xs:element name="participantIdentificationMethod" type="mif:participantIdentificationMethod" maxOccurs="unbounded"/>

Element mif:participantIdentificationMethod / mif:experimentRefList

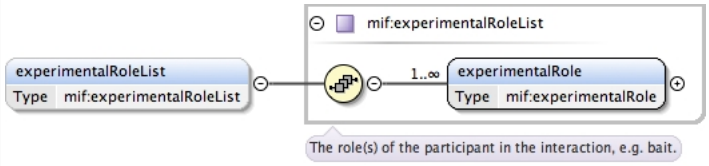
Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef
Instance	<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentRef>{1,unbounded}</mif:experimentRef> </mif:experimentRefList>
Source	<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"> <xs:annotation> <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:biologicalRole

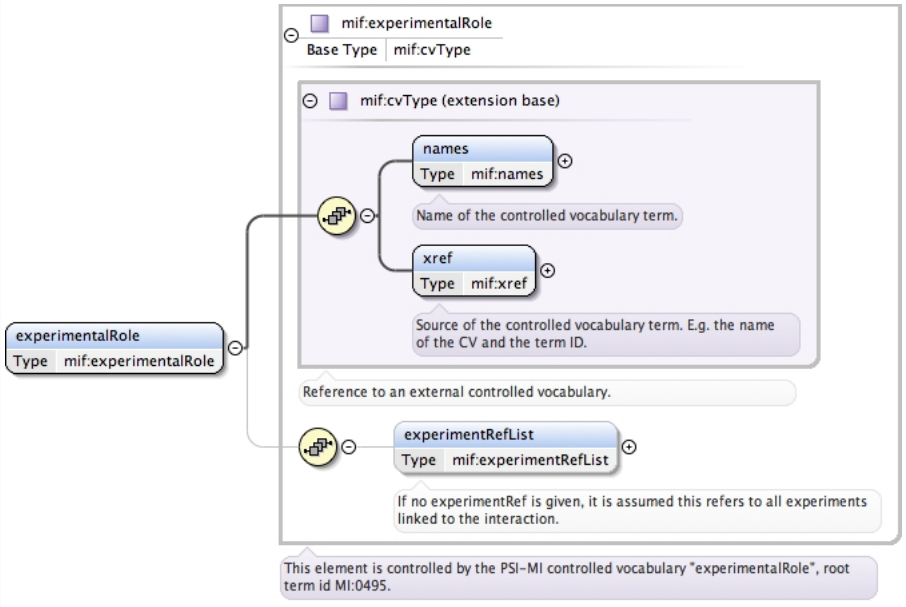
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g. 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled vocabulary "biologicalRole", root term id MI:0500.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref

Children	mif:names, mif:xref
Instance	<mif:biologicalRole xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:biologicalRole>
Source	<xs:element name="biologicalRole" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g. 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled vocabulary "biologicalRole", root term id MI:0500.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:experimentalRoleList

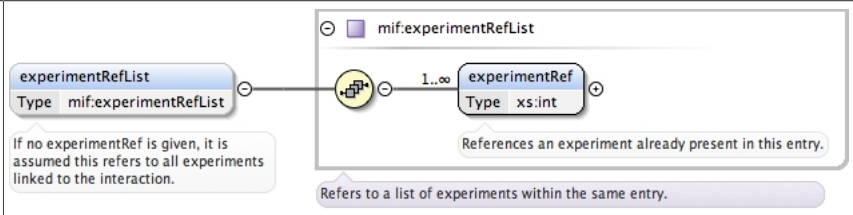
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentalRoleList
Properties	content: complex minOccurs: 0
Model	mif:experimentalRole+
Children	mif:experimentalRole
Instance	<mif:experimentalRoleList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentalRole>{1,unbounded}</mif:experimentalRole> </mif:experimentalRoleList>
Source	<xs:element name="experimentalRoleList" type="mif:experimentalRoleList" minOccurs="0"/>

Element mif:experimentalRoleList / mif:experimentalRole

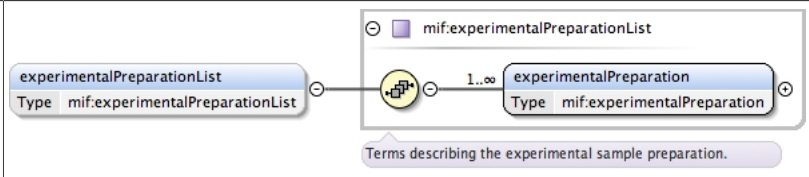
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentalRole
Type hierarchy	• mif:cvType • mif:experimentalRole
Properties	content: complex

	maxOccurs: unbounded
Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref
Instance	<mif:experimentalRole xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> <mif:experimentRefList>{0,1}</mif:experimentRefList> </mif:experimentalRole>
Source	<xs:element name="experimentalRole" type="mif:experimentalRole" maxOccurs="unbounded"/>

Element mif:experimentalRole / mif:experimentRefList

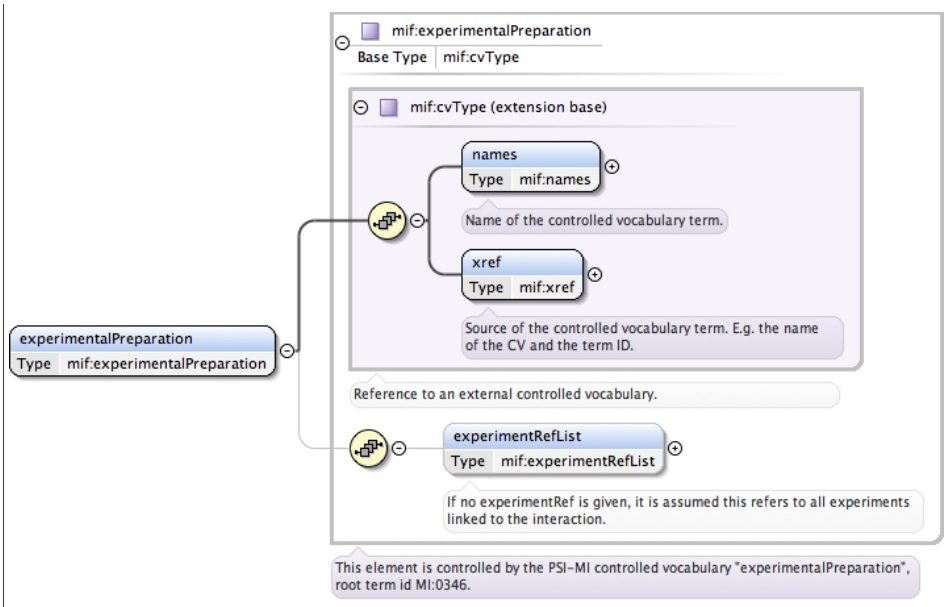
Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef
Instance	<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentRef>{1,unbounded}</mif:experimentRef> </mif:experimentRefList>
Source	<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"> <xs:annotation> <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:experimentalPreparationList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentalPreparationList
Properties	content: complex minOccurs: 0
Model	mif:experimentalPreparation+
Children	mif:experimentalPreparation
Instance	<mif:experimentalPreparationList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentalPreparation>{1,unbounded}</mif:experimentalPreparation> </mif:experimentalPreparationList>
Source	<xs:element name="experimentalPreparationList" type="mif:experimentalPreparationList" minOccurs="0"/> >

Element mif:experimentalPreparationList / mif:experimentalPreparation

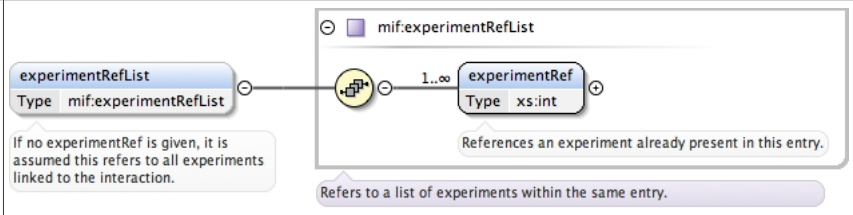
Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:experimentalPreparation
Type hierarchy	• mif:cvType • mif:experimentalPreparation
Properties	content: complex maxOccurs: unbounded
Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref

Instance	`<mif:experimentalPreparation xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`  <mif:experimentRefList>{0,1}</mif:experimentRefList>`
	`</mif:experimentalPreparation>`

Source	`<xs:element name="experimentalPreparation" type="mif:experimentalPreparation" maxOccurs="unbounded"/>`

Element `mif:experimentalPreparation / mif:experimentRefList`

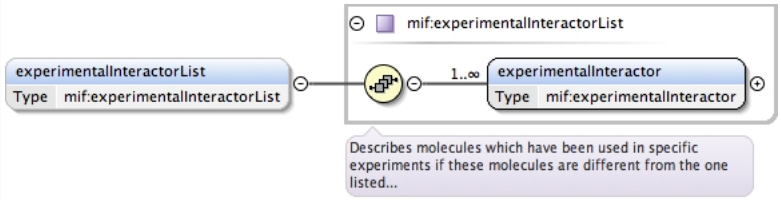
Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation>`
	`  </xs:annotation>`

	`</xs:element>`

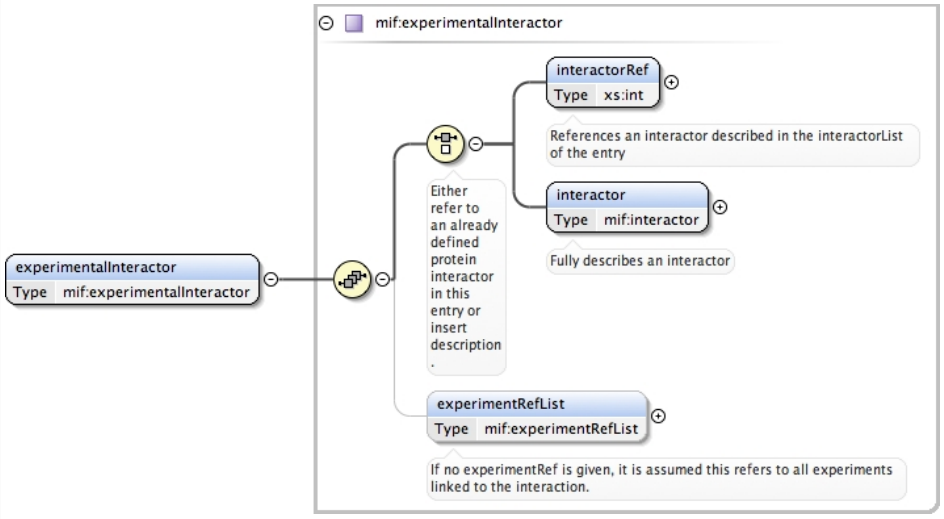
Element `mif:participant / mif:experimentalInteractorList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentalInteractorList
Properties	content: `complex` minOccurs: `0`
Model	mif:experimentalInteractor+
Children	mif:experimentalInteractor

Instance	`<mif:experimentalInteractorList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentalInteractor>{1,unbounded}</mif:experimentalInteractor>`
	`</mif:experimentalInteractorList>`

Source	`<xs:element name="experimentalInteractorList" type="mif:experimentalInteractorList" minOccurs="0"/>`

Element `mif:experimentalInteractorList / mif:experimentalInteractor`

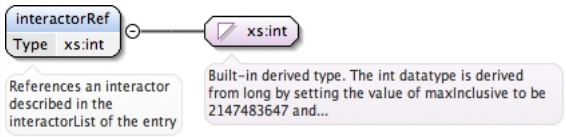
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentalInteractor
Properties	content: `complex` maxOccurs: `unbounded`
Model	(mif:interactorRef | mif:interactor) , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:interactor, mif:interactorRef

Instance	`<mif:experimentalInteractor xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:interactorRef>{1,1}</mif:interactorRef>`
	`  <mif:interactor id="">{1,1}</mif:interactor>`
	`  <mif:experimentRefList>{0,1}</mif:experimentRefList>`
	`</mif:experimentalInteractor>`

Source	`<xs:element name="experimentalInteractor" type="mif:experimentalInteractor" maxOccurs="unbounded"/>`

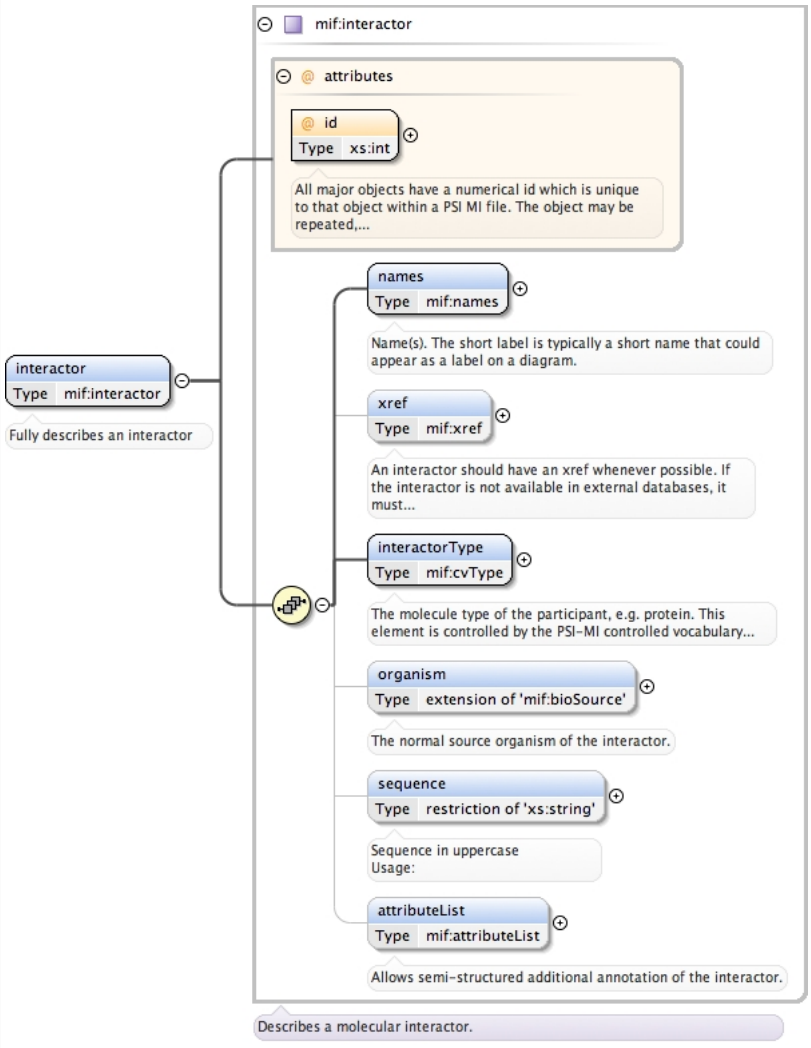
Element `mif:experimentalInteractor / mif:interactorRef`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`References an interactor described in the interactorList of the entry`

Diagram	
Type	xs:int
Properties	content: simple

Source	`<xs:element name="interactorRef" type="xs:int">`
	`  <xs:annotation>`
	`  <xs:documentation>References an interactor described in the interactorList of the entry</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:experimentalInteractor / mif:interactor`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Fully describes an interactor
Diagram	
Type	mif:interactor
Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref

Instance	`<mif:interactor id="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{0,1}</mif:xref>`
	`  <mif:interactorType>{1,1}</mif:interactorType>`

```
  <mif:organism ncbiTaxId="">{0,1}</mif:organism>
  <mif:sequence>{0,1}</mif:sequence>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:interactor>
```

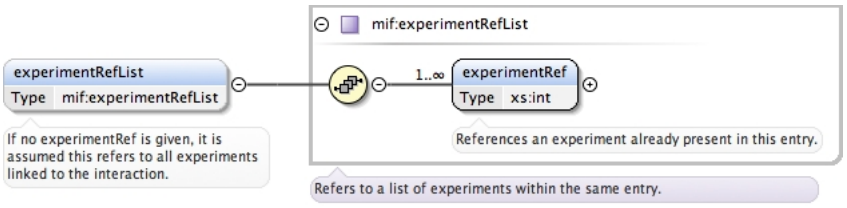
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:element name="interactor" type="mif:interactor">
  <xs:annotation>
    <xs:documentation>Fully describes an interactor</xs:documentation>
  </xs:annotation>
</xs:element>
```

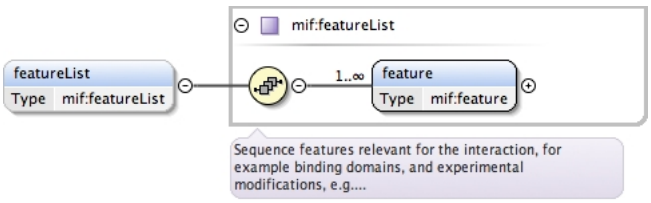
Element mif:experimentalInteractor / mif:experimentRefList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

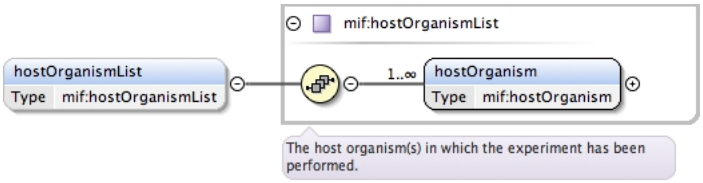
Element mif:participant / mif:featureList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:featureList
Properties	content: complex minOccurs: 0
Model	mif:feature+
Children	mif:feature

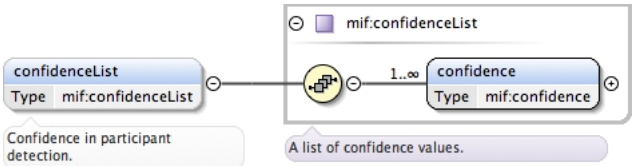
Instance	`<mif:featureList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:feature id="">{1,unbounded}</mif:feature>`
	`</mif:featureList>`

Source	`<xs:element name="featureList" type="mif:featureList" minOccurs="0"/>`

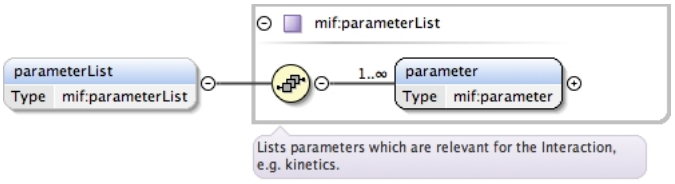
Element mif:participant / mif:hostOrganismList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:hostOrganismList
Properties	content: complex minOccurs: 0
Model	mif:hostOrganism+
Children	mif:hostOrganism
Instance	<mif:hostOrganismList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:hostOrganism ncbiTaxId="">{1,unbounded}</mif:hostOrganism> </mif:hostOrganismList>
Source	<xs:element name="hostOrganismList" type="mif:hostOrganismList" minOccurs="0"/>

Element mif:participant / mif:confidenceList

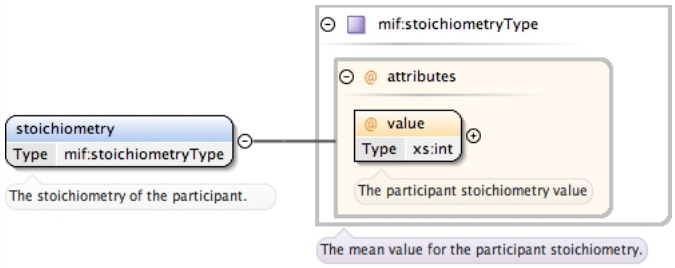
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Confidence in participant detection.
Diagram	
Type	mif:confidenceList
Properties	content: complex minOccurs: 0
Model	mif:confidence+
Children	mif:confidence
Instance	<mif:confidenceList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:confidence>{1,unbounded}</mif:confidence> </mif:confidenceList>
Source	<xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0"> <xs:annotation> <xs:documentation>Confidence in participant detection.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:parameterList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:parameterList
Properties	content: complex minOccurs: 0
Model	mif:parameter+

Children	mif:parameter
Instance	<mif:parameterList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="">{1,unbounded} mif:parameter> </mif:parameterList>
Source	<xs:element name="parameterList" type="mif:parameterList" minOccurs="0"/>

Element mif:participant / mif:stoichiometry

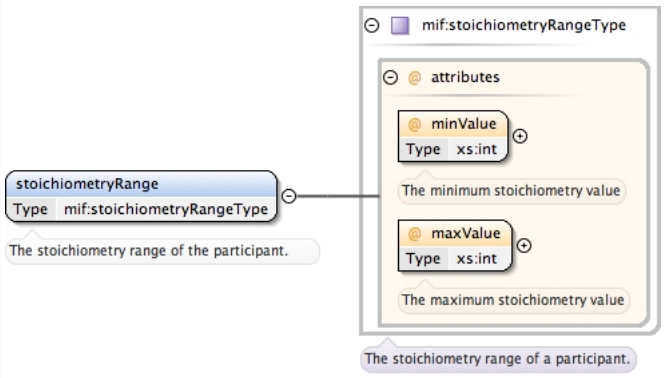
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The stoichiometry of the participant.
Diagram	
Type	mif:stoichiometryType
Properties	content: complex

Attributes

QName	Type	Fixed	Default	Use
value	xs:int			required
	The participant stoichiometry value			

Source	<xs:element name="stoichiometry" type="mif:stoichiometryType"> <xs:annotation> <xs:documentation>The stoichiometry of the participant.</xs:documentation> </xs:annotation> </xs:element>

Element mif:participant / mif:stoichiometryRange

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The stoichiometry range of the participant.
Diagram	
Type	mif:stoichiometryRangeType
Properties	content: complex

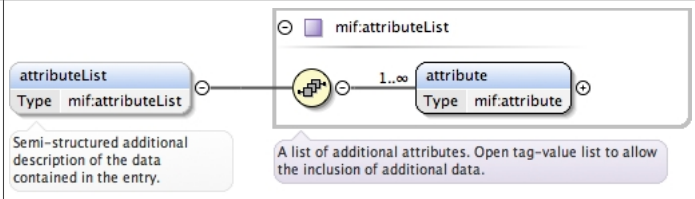
Attributes

QName	Type	Fixed	Default	Use
maxValue	xs:int			required
	The maximum stoichiometry value			
minValue	xs:int			required
	The minimum stoichiometry value			

Source	<xs:element name="stoichiometryRange" type="mif:stoichiometryRangeType"> <xs:annotation> <xs:documentation>The stoichiometry range of the participant.</xs:documentation>

```
  </xs:annotation>
</xs:element>
```

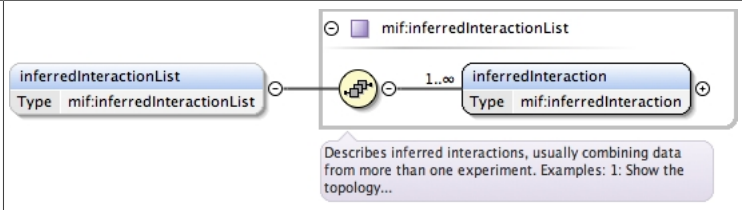
Element mif:participant / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Semi-structured additional description of the data contained in the entry.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute

Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute>`
	`</mif:attributeList>`

Source	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Semi-structured additional description of the data contained in the entry.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

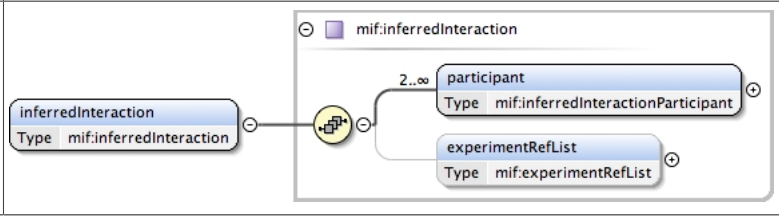
Element mif:interaction / mif:inferredInteractionList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:inferredInteractionList
Properties	content: complex minOccurs: 0
Model	mif:inferredInteraction+
Children	mif:inferredInteraction

Instance	`<mif:inferredInteractionList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:inferredInteraction>{1,unbounded}</mif:inferredInteraction>`
	`</mif:inferredInteractionList>`

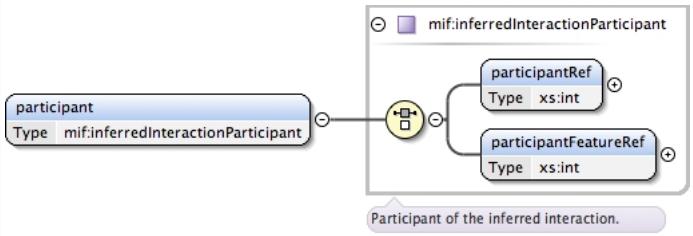
Source	`<xs:element name="inferredInteractionList" type="mif:inferredInteractionList" minOccurs="0"/>`

Element mif:inferredInteractionList / mif:inferredInteraction

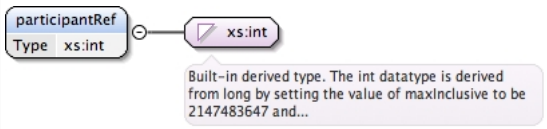
Namespace	http://psi.hupo.org/mi/mif300
Diagram	

Type	mif:inferredInteraction
Properties	content: complex maxOccurs: unbounded
Model	mif:participant{2,unbounded} , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:participant
Instance	<mif:inferredInteraction xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participant>{2,unbounded}</mif:participant> <mif:experimentRefList>{0,1}</mif:experimentRefList> </mif:inferredInteraction>
Source	<xs:element name="inferredInteraction" type="mif:inferredInteraction" maxOccurs="unbounded"/>

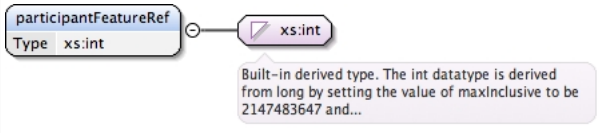
Element mif:inferredInteraction / mif:participant

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:inferredInteractionParticipant
Properties	content: complex minOccurs: 2 maxOccurs: unbounded
Model	mif:participantRef | mif:participantFeatureRef
Children	mif:participantFeatureRef, mif:participantRef
Instance	<mif:participant xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participantRef>{1,1}</mif:participantRef> <mif:participantFeatureRef>{1,1}</mif:participantFeatureRef> </mif:participant>
Source	<xs:element name="participant" type="mif:inferredInteractionParticipant" minOccurs="2" maxOccurs="unbounded"/>

Element mif:inferredInteractionParticipant / mif:participantRef

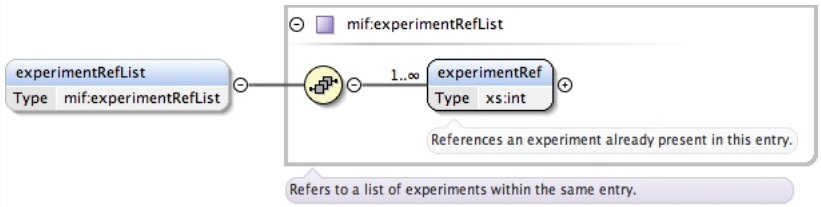
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	xs:int
Properties	content: simple
Source	<xs:element name="participantRef" type="xs:int"/>

Element mif:inferredInteractionParticipant / mif:participantFeatureRef

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	xs:int
Properties	content: simple

Source	`<xs:element name="participantFeatureRef" type="xs:int"/>`

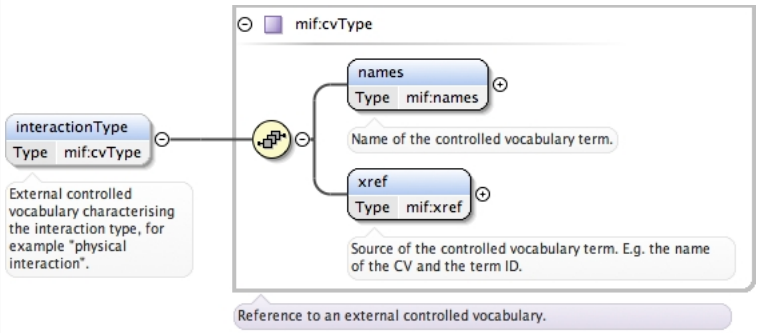
Element `mif:inferredInteraction / mif:experimentRefList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:experimentRefList
Properties	content: complex minOccurs: 0
Model	mif:experimentRef+
Children	mif:experimentRef

Instance	`<mif:experimentRefList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:experimentRef>{1,unbounded}</mif:experimentRef>`
	`</mif:experimentRefList>`

Source	`<xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"/>`

Element `mif:interaction / mif:interactionType`

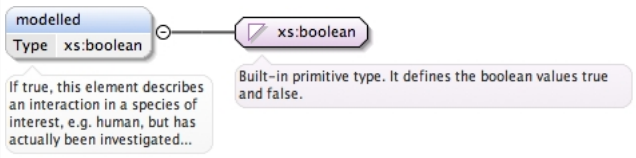
Namespace	http://psi.hupo.org/mi/mif300
Annotations	External controlled vocabulary characterising the interaction type, for example "physical interaction".
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:interactionType xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:interactionType>`

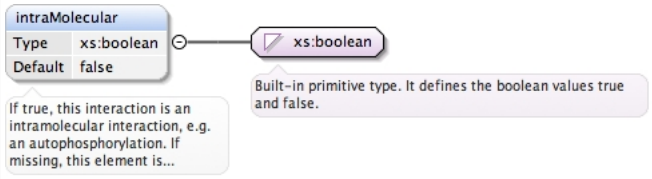
Source	`<xs:element name="interactionType" type="mif:cvType" minOccurs="0" maxOccurs="unbounded">`
	`  <xs:annotation>`
	`  <xs:documentation>External controlled vocabulary characterising the interaction type, for example "physical interaction".</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:interaction / mif:modelled`

Namespace	http://psi.hupo.org/mi/mif300

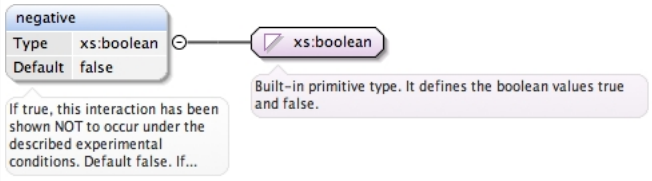
Annotations	If true, this element describes an interaction in a species of interest, e.g. human, but has actually been investigated in another organism, e.g. mouse. The transfer will usually be based on a homology statement made by the data producer. If this optional element is missing, it is assumed to be set to false.
Diagram	
Type	xs:boolean
Properties	content: simple minOccurs: 0
Source	`<xs:element name="modelled" type="xs:boolean" minOccurs="0">` `  <xs:annotation>` ` <xs:documentation>If true, this element describes an interaction in a species of interest, e.g. human, but has actually been investigated in another organism, e.g. mouse. The transfer will usually be based on a homology statement made by the data producer. If this optional element is missing, it is assumed to be set to false.</xs:documentation>` ` </xs:annotation>` `</xs:element>`

Element `mif:interaction / mif:intraMolecular`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is assumed to be false.
Diagram	
Type	xs:boolean
Properties	content: simple minOccurs: 0 default: false

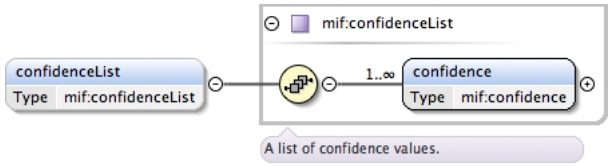
Source	`<xs:element name="intraMolecular" type="xs:boolean" default="false" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is assumed to be false.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:interaction / mif:negative`

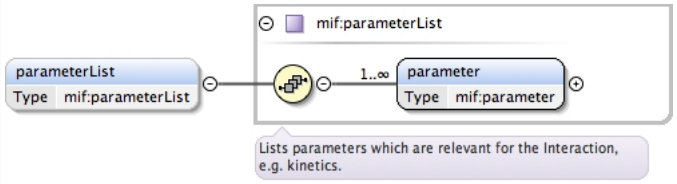
Namespace	http://psi.hupo.org/mi/mif300
Annotations	If true, this interaction has been shown NOT to occur under the described experimental conditions. Default false. If this optional element is missing, it is assumed to be set to false.
Diagram	
Type	xs:boolean
Properties	content: simple minOccurs: 0

	default: false
Source	<xs:element name="negative" type="xs:boolean" default="false" minOccurs="0"> <xs:annotation> <xs:documentation>If true, this interaction has been shown NOT to occur under the described experimental conditions. Default false. If this optional element is missing, it is assumed to be set to false.</xs:documentation> </xs:annotation> </xs:element>

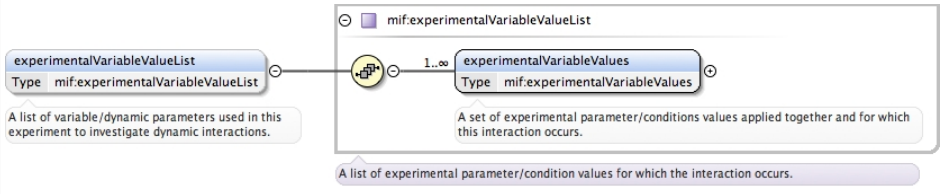
Element mif:interaction / mif:confidenceList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:confidenceList
Properties	content: complex minOccurs: 0
Model	mif:confidence+
Children	mif:confidence
Instance	<mif:confidenceList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:confidence>{1,unbounded}</mif:confidence> </mif:confidenceList>
Source	<xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0"/>

Element mif:interaction / mif:parameterList

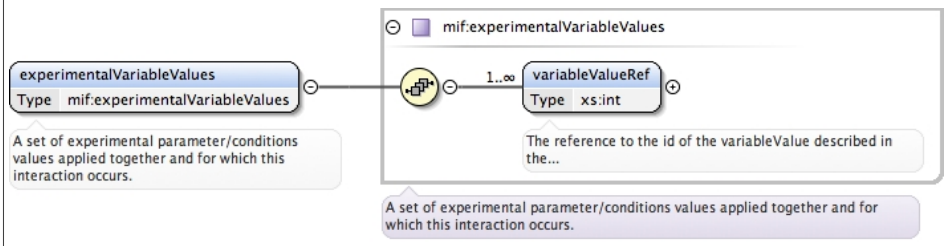
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:parameterList
Properties	content: complex minOccurs: 0
Model	mif:parameter+
Children	mif:parameter
Instance	<mif:parameterList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="">{1,unbounded} mif:parameter> </mif:parameterList>
Source	<xs:element name="parameterList" type="mif:parameterList" minOccurs="0"/>

Element mif:interaction / mif:experimentalVariableValueList

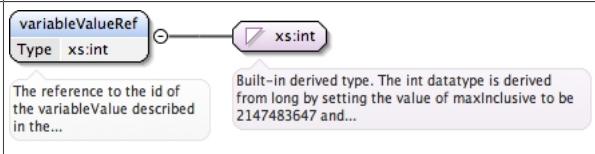
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of variable/dynamic parameters used in this experiment to investigate dynamic interactions.
Diagram	

Type	mif:experimentalVariableValueList
Properties	content: complex minOccurs: 0
Model	mif:experimentalVariableValues+
Children	mif:experimentalVariableValues
Instance	<mif:experimentalVariableValueList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:experimentalVariableValues>{1,unbounded}</mif:experimentalVariableValues> </mif:experimentalVariableValueList>
Source	<xs:element name="experimentalVariableValueList" type="mif:experimentalVariableValueList" minOccurs="0"> <xs:annotation> <xs:documentation>A list of variable/dynamic parameters used in this experiment to investigate dynamic interactions.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentalVariableValueList / mif:experimentalVariableValues

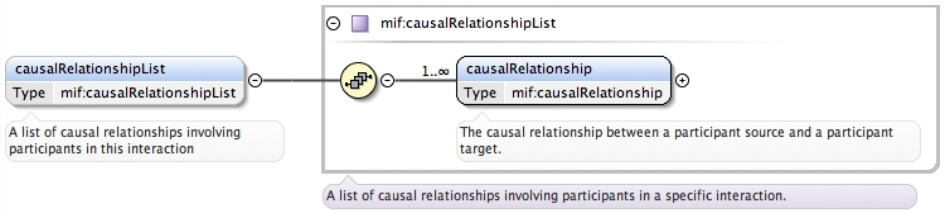
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A set of experimental parameter/conditions values applied together and for which this interaction occurs.
Diagram	
Type	mif:experimentalVariableValues
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	mif:variableValueRef+
Children	mif:variableValueRef
Instance	<mif:experimentalVariableValues xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:variableValueRef>{1,unbounded}</mif:variableValueRef> </mif:experimentalVariableValues>
Source	<xs:element name="experimentalVariableValues" minOccurs="1" maxOccurs="unbounded" type="mif:experimentalVariableValues"> <xs:annotation> <xs:documentation>A set of experimental parameter/conditions values applied together and for which this interaction occurs.</xs:documentation> </xs:annotation> </xs:element>

Element mif:experimentalVariableValues / mif:variableValueRef

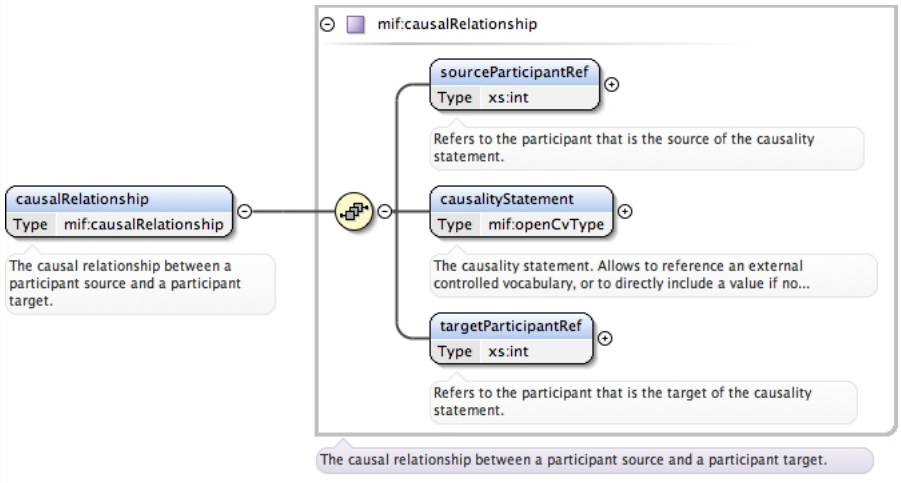
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The reference to the id of the variableValue described in the variableParameterList/variableParameter/variableParameterValueList of the experiment.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1

	maxOccurs:	unbounded
Source	<xs:element name="variableValueRef" minOccurs="1" maxOccurs="unbounded" type="xs:int"> <xs:annotation> <xs:documentation>The reference to the id of the variableValue described in the variableParameterList/variableParameter/variableParameterValueList of the experiment.</xs:documentation> </xs:annotation> </xs:element>	

Element mif:interaction / mif:causalRelationshipList

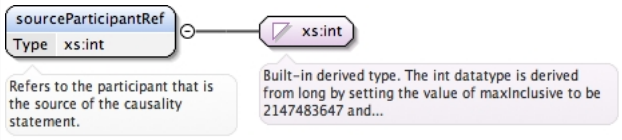
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of causal relationships involving participants in this interaction
Diagram	
Type	mif:causalRelationshipList
Properties	content: complex minOccurs: 0
Model	mif:causalRelationship+
Children	mif:causalRelationship
Instance	<mif:causalRelationshipList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:causalRelationship>{1,unbounded}</mif:causalRelationship> </mif:causalRelationshipList>
Source	<xs:element name="causalRelationshipList" type="mif:causalRelationshipList" minOccurs="0"> <xs:annotation> <xs:documentation>A list of causal relationships involving participants in this interaction</xs:documentation> </xs:annotation> </xs:element>

Element mif:causalRelationshipList / mif:causalRelationship

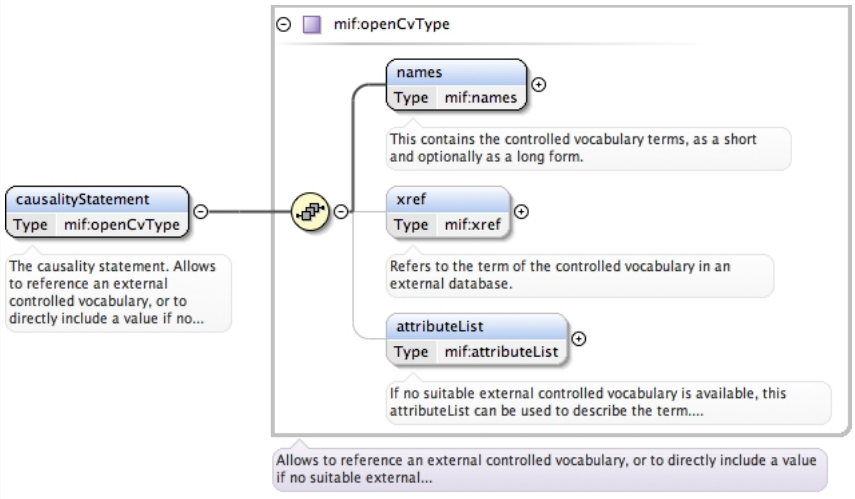
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The causal relationship between a participant source and a participant target.
Diagram	
Type	mif:causalRelationship
Properties	content: complex minOccurs: 1 maxOccurs: unbounded

Model	mif:sourceParticipantRef , mif:causalityStatement , mif:targetParticipantRef
Children	mif:causalityStatement, mif:sourceParticipantRef, mif:targetParticipantRef
Instance	<mif:causalRelationship xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:sourceParticipantRef>{1,1}</mif:sourceParticipantRef> <mif:causalityStatement>{1,1}</mif:causalityStatement> <mif:targetParticipantRef>{1,1}</mif:targetParticipantRef> </mif:causalRelationship>
Source	<xs:element name="causalRelationship" type="mif:causalRelationship" minOccurs="1" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>The causal relationship between a participant source and a participant target.</xs:documentation> </xs:annotation> </xs:element>

Element mif:causalRelationship / mif:sourceParticipantRef

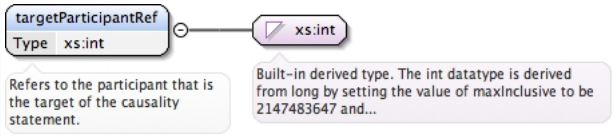
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the participant that is the source of the causality statement.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: 1
Source	<xs:element name="sourceParticipantRef" type="xs:int" minOccurs="1" maxOccurs="1"> <xs:annotation> <xs:documentation>Refers to the participant that is the source of the causality statement.</ xs:documentation> </xs:annotation> </xs:element>

Element mif:causalRelationship / mif:causalityStatement

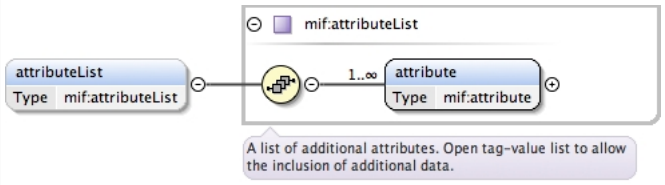
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The causality statement. Allows to reference an external controlled vocabulary, or to directly include a value if no suitable external definition is available.
Diagram	
Type	mif:openCvType
Properties	content: complex minOccurs: 1 maxOccurs: 1

Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref
Instance	<mif:causalityStatement xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> </mif:causalityStatement>
Source	<xs:element name="causalityStatement" type="mif:openCvType" minOccurs="1" maxOccurs="1"> <xs:annotation> <xs:documentation>The causality statement. Allows to reference an external controlled vocabulary, or to directly include a value if no suitable external definition is available.</xs:documentation> </xs:annotation> </xs:element>

Element mif:causalRelationship / mif:targetParticipantRef

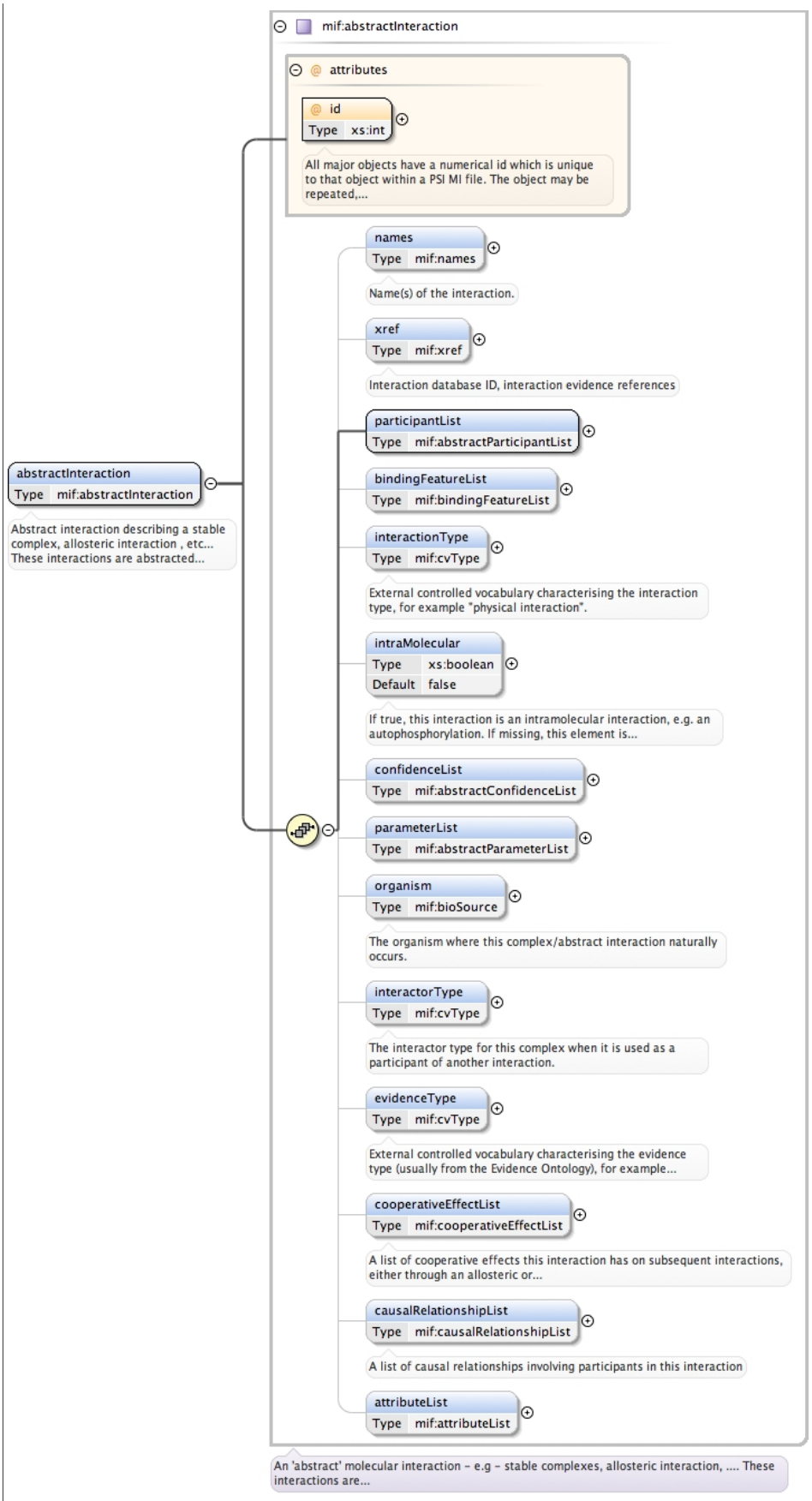
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the participant that is the target of the causality statement.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: 1
Source	<xs:element name="targetParticipantRef" type="xs:int" minOccurs="1" maxOccurs="1"> <xs:annotation> <xs:documentation>Refers to the participant that is the target of the causality statement.</xs:documentation> </xs:annotation> </xs:element>

Element mif:interaction / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>

Element mif:interactionList / mif:abstractInteraction

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Abstract interaction describing a stable complex, allosteric interaction , etc... These interactions are abstracted from the experimental context and used to describe biological entities

Diagram	
Type	mif:abstractInteraction
Properties	content: complex

Model	mif:names{0,1} , mif:xref{0,1} , mif:participantList , mif:bindingFeatureList{0,1} , mif:interactionType{0,1} , mif:intraMolecular{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , mif:organism{0,1} , mif:interactorType{0,1} , mif:evidenceType{0,1} , mif:cooperativeEffectList{0,1} , mif:causalRelationshipList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bindingFeatureList, mif:causalRelationshipList, mif:confidenceList, mif:cooperativeEffectList, mif:evidenceType, mif:interactionType, mif:interactorType, mif:intraMolecular, mif:names, mif:organism, mif:parameterList, mif:participantList, mif:xref

Instance

```
<mif:abstractInteraction id="" xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:names>{0,1}</mif:names>
  <mif:xref>{0,1}</mif:xref>
  <mif:participantList>{1,1}</mif:participantList>
  <mif:bindingFeatureList>{0,1}</mif:bindingFeatureList>
  <mif:interactionType>{0,1}</mif:interactionType>
  <mif:intraMolecular>{0,1}</mif:intraMolecular>
  <mif:confidenceList>{0,1}</mif:confidenceList>
  <mif:parameterList>{0,1}</mif:parameterList>
  <mif:organism ncbiTaxId="">{0,1}</mif:organism>
  <mif:interactorType>{0,1}</mif:interactorType>
  <mif:evidenceType>{0,1}</mif:evidenceType>
  <mif:cooperativeEffectList>{0,1}</mif:cooperativeEffectList>
  <mif:causalRelationshipList>{0,1}</mif:causalRelationshipList>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:abstractInteraction>
```

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

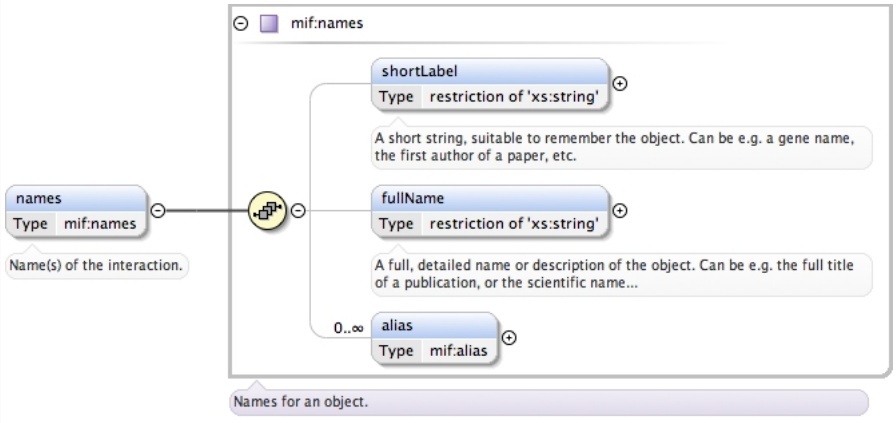
Source

```
<xs:element name="abstractInteraction" type="mif:abstractInteraction">
  <xs:annotation>
    <xs:documentation>Abstract interaction describing a stable complex, allosteric interaction ,
 etc... These interactions are abstracted from the experimental context and used to describe
 biological entities</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:abstractInteraction / mif:names`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Name(s) of the interaction.

Diagram



Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance

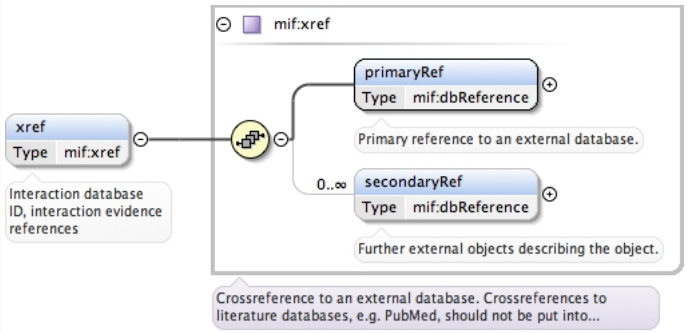
```
<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">
  <mif:shortLabel>{0,1}</mif:shortLabel>
  <mif:fullName>{0,1}</mif:fullName>
  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>
</mif:names>
```

Source

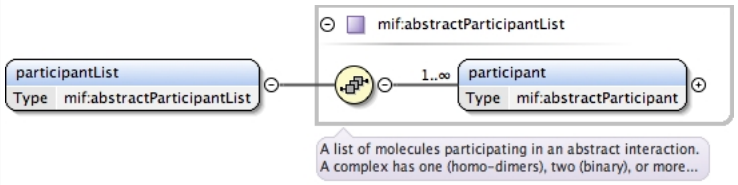
```
<xs:element name="names" type="mif:names" minOccurs="0">
  <xs:annotation>
```

```
    <xs:documentation>Name(s) of the interaction.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element mif:abstractInteraction / mif:xref

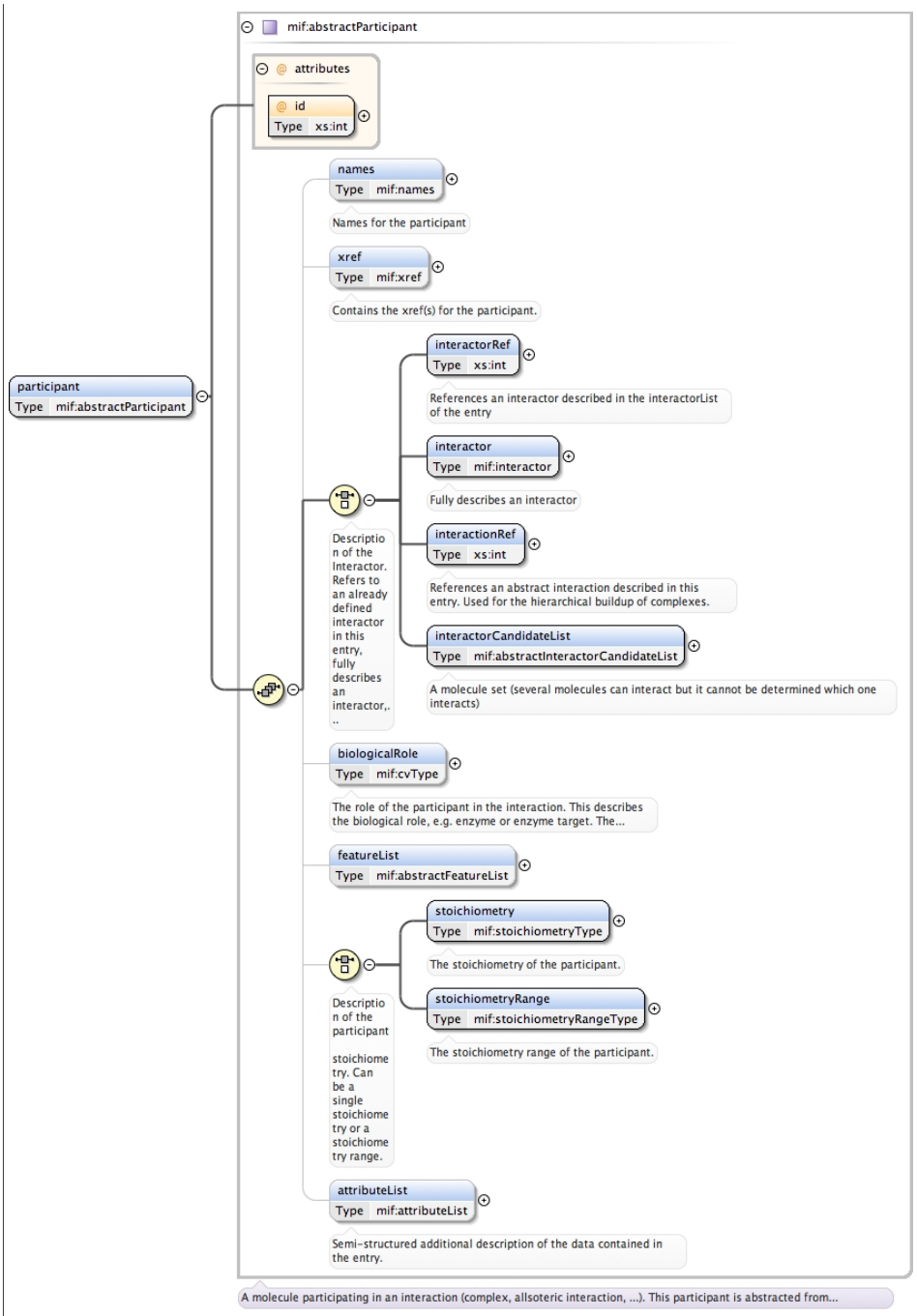
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Interaction database ID, interaction evidence references
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Interaction database ID, interaction evidence references</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:participantList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractParticipantList
Properties	content: complex
Model	mif:participant+
Children	mif:participant
Instance	<mif:participantList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participant id="">{1,unbounded}</mif:participant> </mif:participantList>
Source	<xs:element name="participantList" type="mif:abstractParticipantList"/>

Element mif:abstractParticipantList / mif:participant

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:abstractParticipant
Properties	content: complex maxOccurs: unbounded
Model	mif:names{0,1} , mif:xref{0,1} , (mif:interactorRef | mif:interactor | mif:interactionRef | mif:interactorCandidateList) , mif:biologicalRole{0,1} , mif:featureList{0,1} , (mif:stoichiometry | mif:stoichiometryRange) , mif:attributeList{0,1}
Children	mif:attributeList, mif:biologicalRole, mif:featureList, mif:interactionRef, mif:interactor, mif:interactorCandidateList, mif:interactorRef, mif:names, mif:stoichiometry, mif:stoichiometryRange, mif:xref
Instance	<mif:participant id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{0,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:interactorRef>{1,1}</mif:interactorRef> <mif:interactor id="">{1,1}</mif:interactor> <mif:interactionRef>{1,1}</mif:interactionRef> <mif:interactorCandidateList>{1,1}</mif:interactorCandidateList> <mif:biologicalRole>{0,1}</mif:biologicalRole> <mif:featureList>{0,1}</mif:featureList> <mif:stoichiometry value="">{1,1}</mif:stoichiometry>

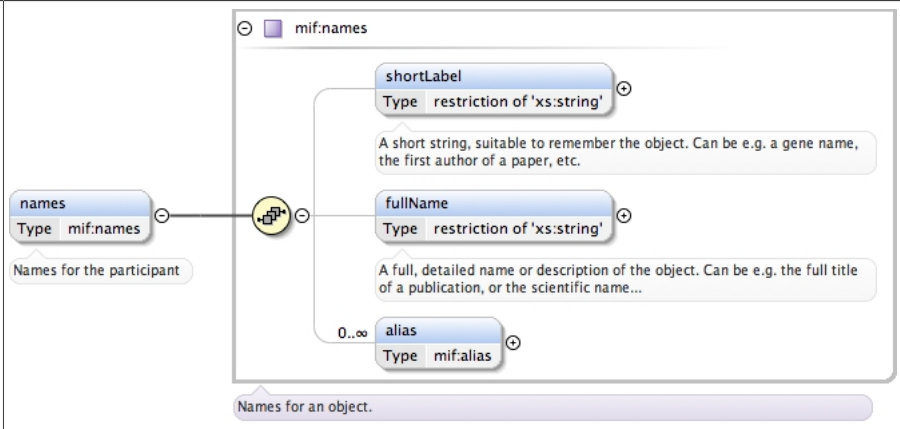
```
  <mif:stoichiometryRange maxValue="" minValue="">{1,1}</mif:stoichiometryRange>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:participant>
```

Attributes	QName	Type	Fixed	Default	Use
	id	xs:int			required

Source

```
<xs:element name="participant" type="mif:abstractParticipant" maxOccurs="unbounded"/>
```

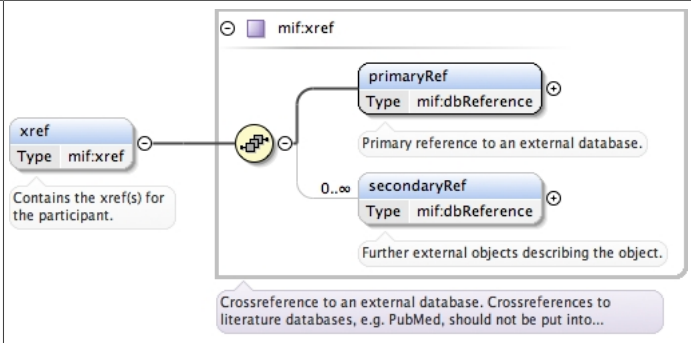
Element mif:abstractParticipant / mif:names

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Names for the participant
Diagram	
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

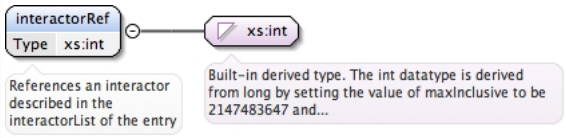
Source	`<xs:element name="names" type="mif:names" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Names for the participant</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:abstractParticipant / mif:xref

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Contains the xref(s) for the participant.
Diagram	
Type	mif:xref
Properties	content: complex minOccurs: 0

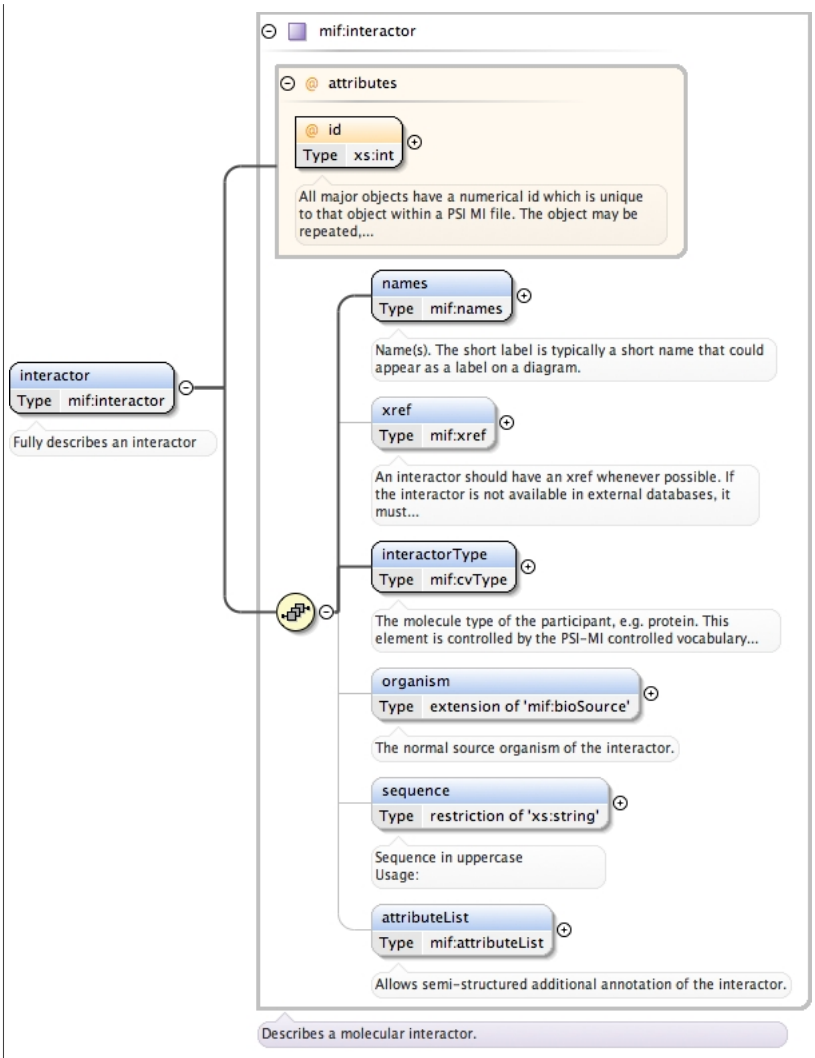
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Contains the xref(s) for the participant.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractParticipant / mif:interactorRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an interactor described in the interactorList of the entry
Diagram	
Type	xs:int
Properties	content: simple
Source	<xs:element name="interactorRef" type="xs:int"> <xs:annotation> <xs:documentation>References an interactor described in the interactorList of the entry</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractParticipant / mif:interactor

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Fully describes an interactor

Diagram	
Type	mif:interactor
Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref
Instance	<mif:interactor id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:interactorType>{1,1}</mif:interactorType> <mif:organism ncbiTaxId="">{0,1}</mif:organism> <mif:sequence>{0,1}</mif:sequence> <mif:attributeList>{0,1}</mif:attributeList> </mif:interactor>

Attributes

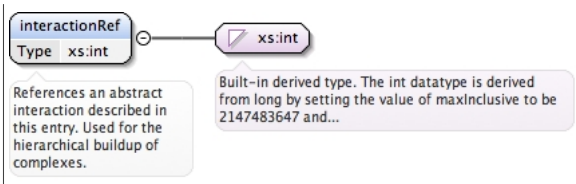
QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:element name="interactor" type="mif:interactor">
  <xs:annotation>
    <xs:documentation>Fully describes an interactor</xs:documentation>
  </xs:annotation>
</xs:element>
```

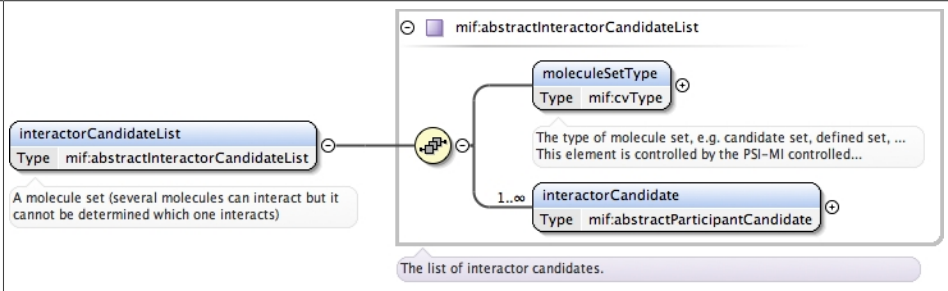
Element mif:abstractParticipant / mif:interactionRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	References an abstract interaction described in this entry. Used for the hierarchical buildup of complexes.

Diagram	
Type	xs:int
Properties	content: simple

Source	`<xs:element name="interactionRef" type="xs:int">`
	`  <xs:annotation>`
	`  <xs:documentation>References an abstract interaction described in this entry. Used for the hierarchical buildup of complexes.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

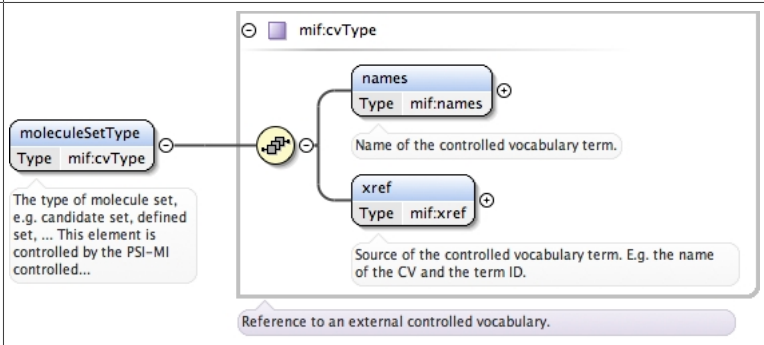
Element mif:abstractParticipant / mif:interactorCandidateList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecule set (several molecules can interact but it cannot be determined which one interacts)
Diagram	
Type	mif:abstractInteractorCandidateList
Properties	content: complex
Model	mif:moleculeSetType , mif:interactorCandidate+
Children	mif:interactorCandidate, mif:moleculeSetType

Instance	`<mif:interactorCandidateList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:moleculeSetType>{1,1}</mif:moleculeSetType>`
	`  <mif:interactorCandidate id="">{1,unbounded}</mif:interactorCandidate>`
	`</mif:interactorCandidateList>`

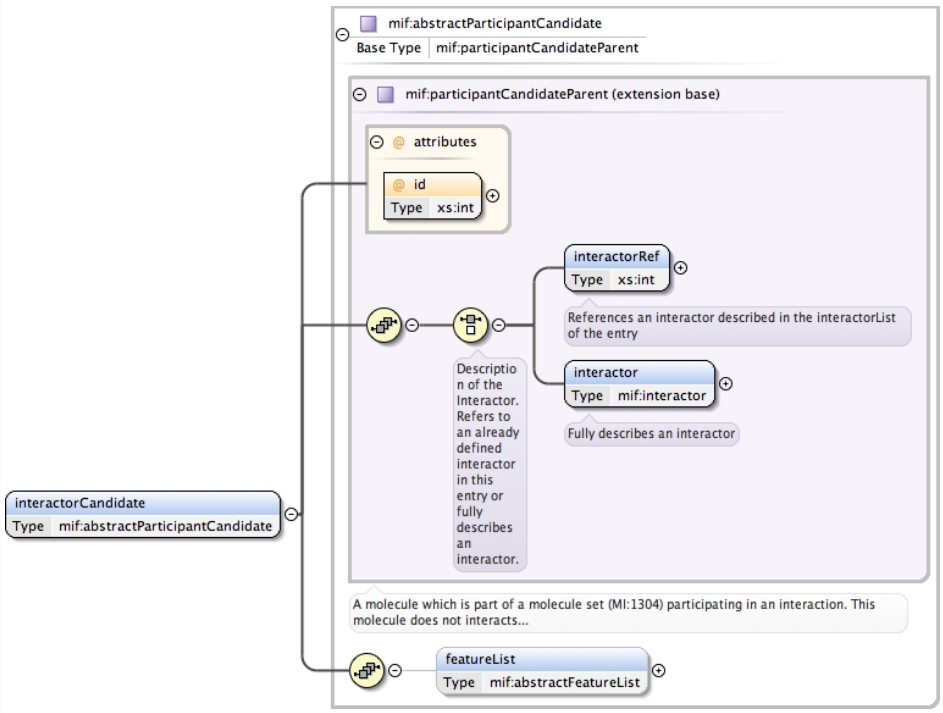
Source	`<xs:element name="interactorCandidateList" type="mif:abstractInteractorCandidateList">`
	`  <xs:annotation>`
	`  <xs:documentation>A molecule set (several molecules can interact but it cannot be determined which one interacts)</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:abstractInteractorCandidateList / mif:moleculeSetType

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.
Diagram	
Type	mif:cvType

Properties	content: complex minOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:moleculeSetType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:moleculeSetType>
Source	<xs:element name="moleculeSetType" type="mif:cvType" minOccurs="1"> <xs:annotation> <xs:documentation>The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.</xs:documentation> </xs:annotation> </xs:element>

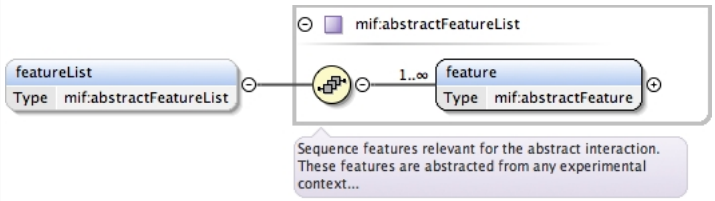
Element mif:abstractInteractorCandidateList / mif:interactorCandidate

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractParticipantCandidate
Type hierarchy	• mif:participantCandidateParent • mif:abstractParticipantCandidate
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	(mif:interactorRef | mif:interactor) , mif:featureList{0,1}
Children	mif:featureList, mif:interactor, mif:interactorRef
Instance	<mif:interactorCandidate id="" xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:interactorRef>{1,1}</mif:interactorRef> <mif:interactor id="">{1,1}</mif:interactor> <mif:featureList>{0,1}</mif:featureList> </mif:interactorCandidate>

Attributes	QName	Type	Fixed	Default	Use
	id	xs:int			required

Source	<xs:element name="interactorCandidate" type="mif:abstractParticipantCandidate" maxOccurs="unbounded" minOccurs="1"/>

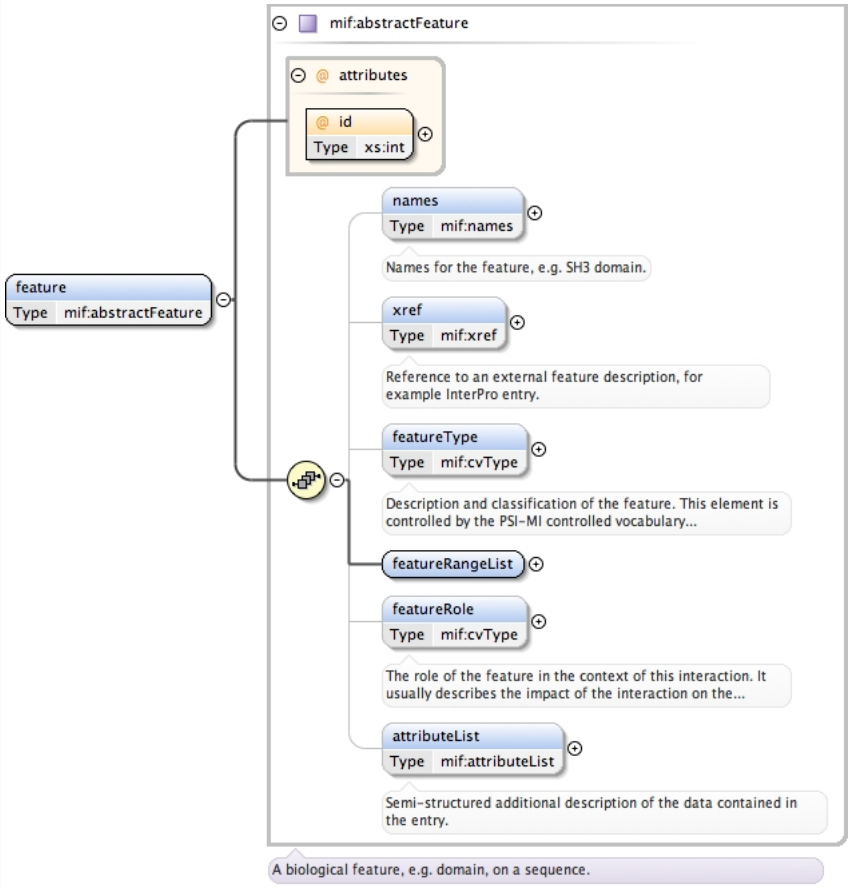
Element `mif:abstractParticipantCandidate / mif:featureList`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractFeatureList
Properties	content: complex minOccurs: 0
Model	mif:feature+
Children	mif:feature

Instance	`<mif:featureList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:feature id="">{1,unbounded}</mif:feature>`
	`</mif:featureList>`

Source	`<xs:element name="featureList" type="mif:abstractFeatureList" minOccurs="0"/>`

Element `mif:abstractFeatureList / mif:feature`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractFeature
Properties	content: complex maxOccurs: unbounded
Model	mif:names{0,1} , mif:xref{0,1} , mif:featureType{0,1} , mif:featureRangeList , mif:featureRole{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:featureRangeList, mif:featureRole, mif:featureType, mif:names, mif:xref
Instance	`<mif:feature id="" xmlns:mif="http://psi.hupo.org/mi/mif300">`

```
  <mif:names>{0,1}</mif:names>
  <mif:xref>{0,1}</mif:xref>
  <mif:featureType>{0,1}</mif:featureType>
  <mif:featureRangeList>{1,1}</mif:featureRangeList>
  <mif:featureRole>{0,1}</mif:featureRole>
  <mif:attributeList>{0,1}</mif:attributeList>
</mif:feature>
```

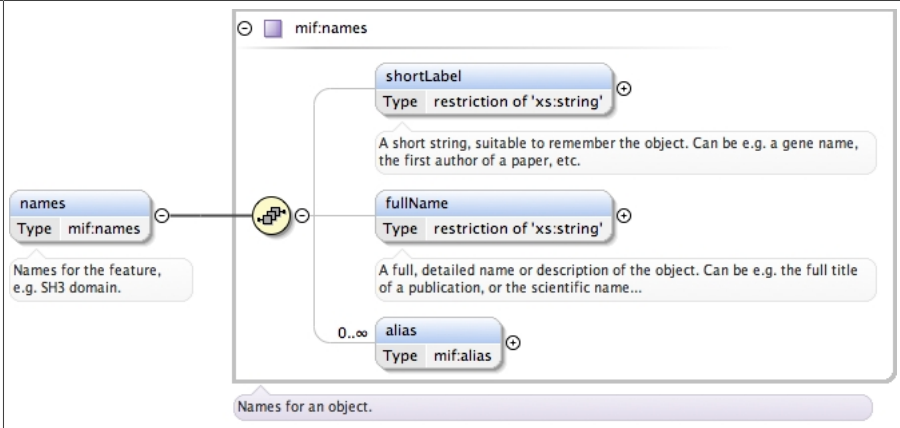
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

Source

```
<xs:element name="feature" type="mif:abstractFeature" maxOccurs="unbounded"/>
```

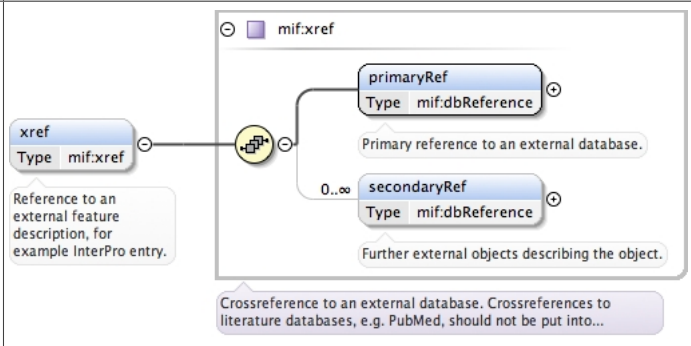
Element `mif:abstractFeature / mif:names`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Names for the feature, e.g. SH3 domain.
Diagram	
Type	mif:names
Properties	content: complex minOccurs: 0
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel

Instance	`<mif:names xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:shortLabel>{0,1}</mif:shortLabel>`
	`  <mif:fullName>{0,1}</mif:fullName>`
	`  <mif:alias type="" typeAc="">{0,unbounded}</mif:alias>`
	`</mif:names>`

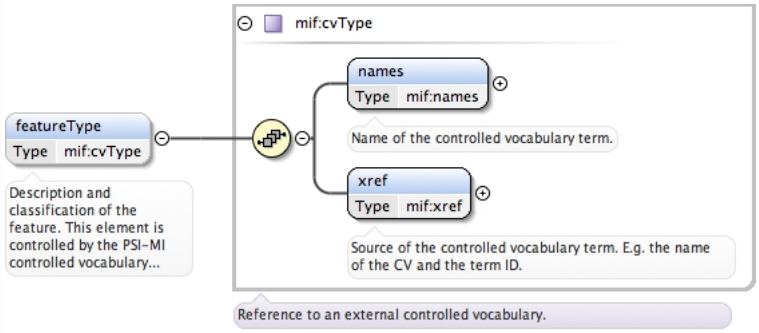
Source	`<xs:element name="names" type="mif:names" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Names for the feature, e.g. SH3 domain.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:abstractFeature / mif:xref`

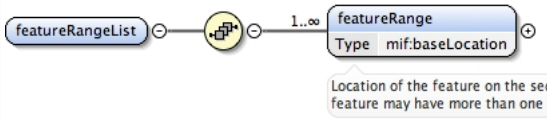
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Reference to an external feature description, for example InterPro entry.
Diagram	
Type	mif:xref

Properties	content: complex minOccurs: 0
Model	mif:primaryRef , mif:secondaryRef*
Children	mif:primaryRef, mif:secondaryRef
Instance	<mif:xref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:primaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{1,1}</mif:primaryRef> <mif:secondaryRef db="" dbAc="" id="" refType="" refTypeAc="" secondary="" version="">{0,unbounded}</mif:secondaryRef> </mif:xref>
Source	<xs:element name="xref" type="mif:xref" minOccurs="0"> <xs:annotation> <xs:documentation>Reference to an external feature description, for example InterPro entry.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractFeature / mif:featureType

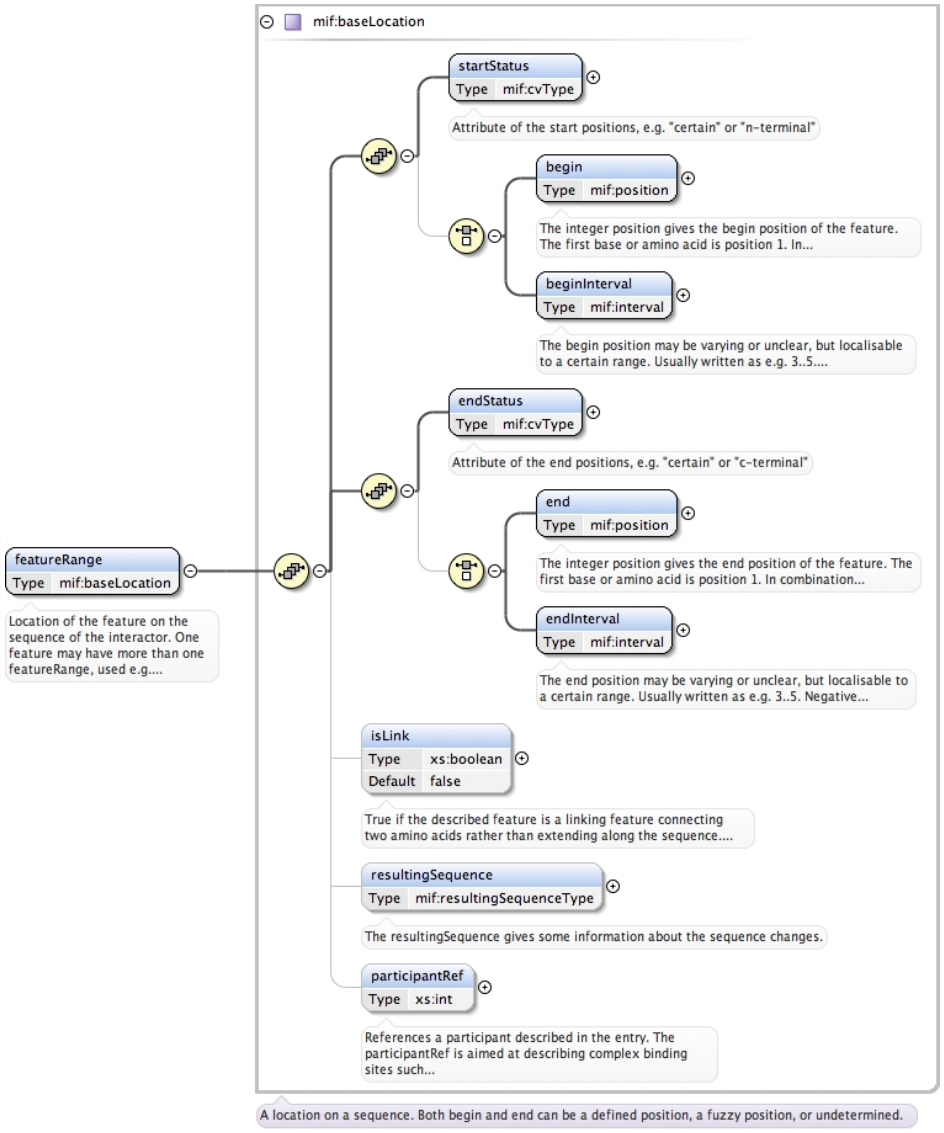
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Description and classification of the feature. This element is controlled by the PSI-MI controlled vocabulary "feature", root term id MI:0116.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:featureType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:featureType>
Source	<xs:element name="featureType" type="mif:cvType" maxOccurs="1" minOccurs="0"> <xs:annotation> <xs:documentation>Description and classification of the feature. This element is controlled by the PSI-MI controlled vocabulary "feature", root term id MI:0116.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractFeature / mif:featureRangeList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Properties	content: complex
Model	mif:featureRange+

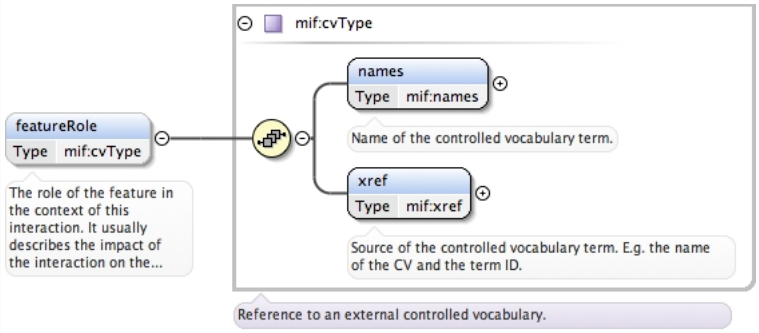
Children	mif:featureRange
Instance	<mif:featureRangeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:featureRange>{1,unbounded}</mif:featureRange> </mif:featureRangeList>
Source	<xs:element name="featureRangeList"> <xs:complexType> <xs:sequence> <xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType> </xs:element>

Element mif:abstractFeature / mif:featureRangeList / mif:featureRange

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.
Diagram	
Type	mif:baseLocation

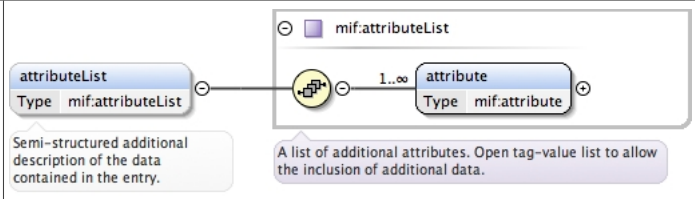
Properties	content: complex maxOccurs: unbounded
Model	mif:startStatus , (mif:begin | mif:beginInterval) , mif:endStatus , (mif:end | mif:endInterval) , mif:isLink{0,1} , mif:resultingSequence{0,1} , mif:participantRef{0,1}
Children	mif:begin, mif:beginInterval, mif:end, mif:endInterval, mif:endStatus, mif:isLink, mif:participantRef, mif:resultingSequence, mif:startStatus
Instance	<mif:featureRange xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:startStatus>{1,1}</mif:startStatus> <mif:begin position="">{1,1}</mif:begin> <mif:beginInterval begin="" end="">{1,1}</mif:beginInterval> <mif:endStatus>{1,1}</mif:endStatus> <mif:end position="">{1,1}</mif:end> <mif:endInterval begin="" end="">{1,1}</mif:endInterval> <mif:isLink>{0,1}</mif:isLink> <mif:resultingSequence>{0,1}</mif:resultingSequence> <mif:participantRef>{0,1}</mif:participantRef> </mif:featureRange>
Source	<xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>Location of the feature on the sequence of the interactor. One feature may have more than one featureRange, used e.g. for features which involve sequence positions close in the folded, three-dimensional state of a protein, but non-continuous along the sequence.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractFeature / mif:featureRole

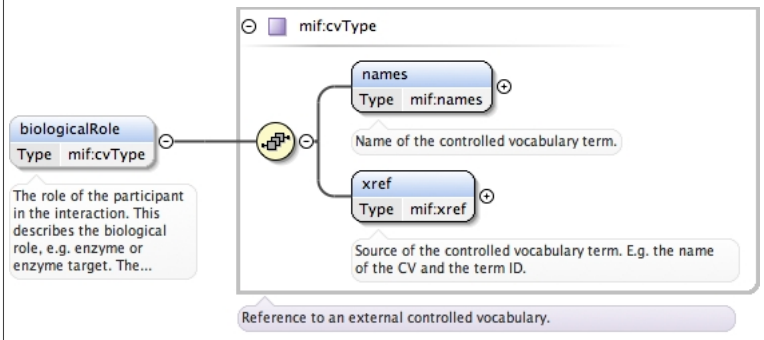
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The role of the feature in the context of this interaction. It usually describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of the feature on the interaction. (Ex: prerequisite-ptm,...).
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:featureRole xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:featureRole>
Source	<xs:element name="featureRole" type="mif:cvType" minOccurs="0" maxOccurs="1"> <xs:annotation> <xs:documentation>The role of the feature in the context of this interaction. It usually describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of the feature on the interaction. (Ex: prerequisite-ptm,...).</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractFeature / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300

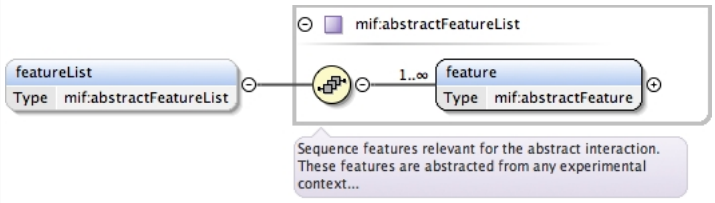
Annotations	Semi-structured additional description of the data contained in the entry.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>Semi-structured additional description of the data contained in the entry.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractParticipant / mif:biologicalRole

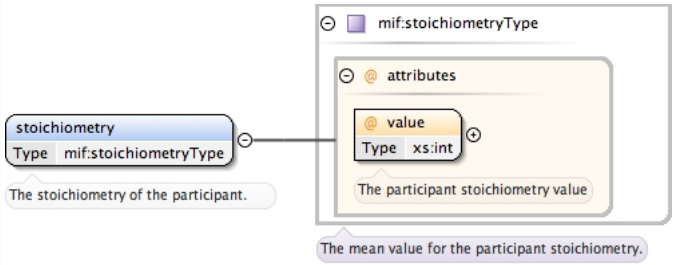
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g. 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled vocabulary "biologicalRole", root term id MI:0500.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:biologicalRole xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:biologicalRole>
Source	<xs:element name="biologicalRole" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g. 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled vocabulary "biologicalRole", root term id MI:0500.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractParticipant / mif:featureList

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:abstractFeatureList
Properties	content: complex minOccurs: 0
Model	mif:feature+
Children	mif:feature
Instance	`<mif:featureList xmlns:mif="http://psi.hupo.org/mi/mif300">   <mif:feature id="">{1,unbounded}</mif:feature> </mif:featureList>`
Source	`<xs:element name="featureList" type="mif:abstractFeatureList" minOccurs="0"/>`

Element `mif:abstractParticipant / mif:stoichiometry`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The stoichiometry of the participant.
Diagram	
Type	mif:stoichiometryType
Properties	content: complex

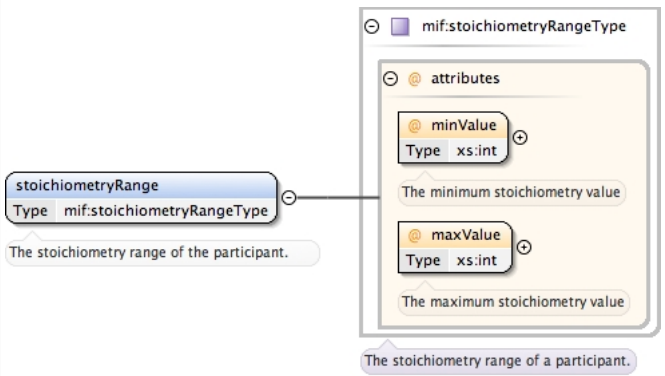
Attributes

QName	Type	Fixed	Default	Use
value	xs:int			required
	The participant stoichiometry value			

Source

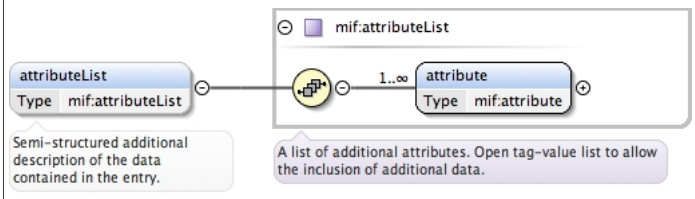
```
<xs:element name="stoichiometry" type="mif:stoichiometryType">
  <xs:annotation>
    <xs:documentation>The stoichiometry of the participant.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:abstractParticipant / mif:stoichiometryRange`

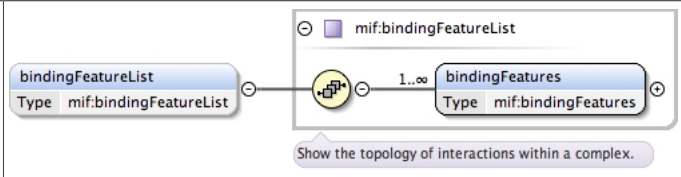
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The stoichiometry range of the participant.
Diagram	
Type	mif:stoichiometryRangeType

Properties	content:	complex			
Attributes	**QName**	**Type**	**Fixed**	**Default**	**Use**
	maxValue	xs:int			required
		The maximum stoichiometry value			
	minValue	xs:int			required
		The minimum stoichiometry value			
Source	<xs:element name="stoichiometryRange" type="mif:stoichiometryRangeType"> <xs:annotation> <xs:documentation>The stoichiometry range of the participant.</xs:documentation> </xs:annotation> </xs:element>				

Element mif:abstractParticipant / mif:attributeList

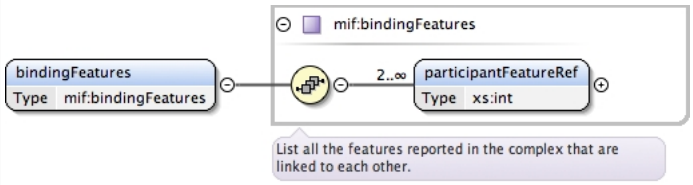
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Semi-structured additional description of the data contained in the entry.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"> <xs:annotation> <xs:documentation>Semi-structured additional description of the data contained in the entry.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:bindingFeatureList

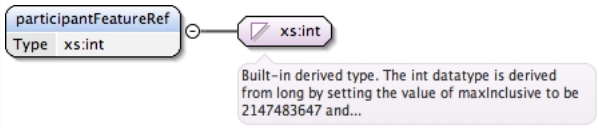
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:bindingFeatureList
Properties	content: complex minOccurs: 0
Model	mif:bindingFeatures+
Children	mif:bindingFeatures
Instance	<mif:bindingFeatureList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:bindingFeatures>{1,unbounded}</mif:bindingFeatures> </mif:bindingFeatureList>
Source	<xs:element name="bindingFeatureList" type="mif:bindingFeatureList" minOccurs="0"/>

Element mif:bindingFeatureList / mif:bindingFeatures

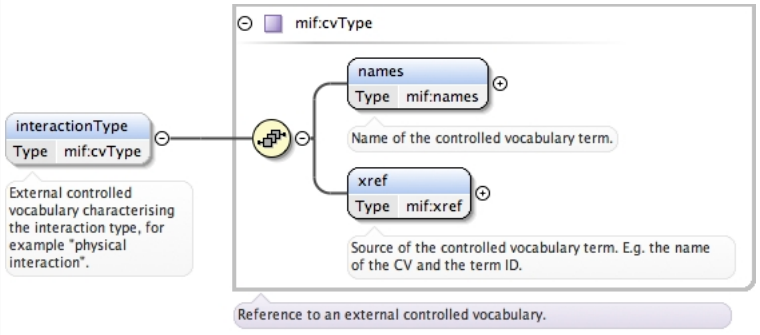
Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:bindingFeatures
Properties	content: complex maxOccurs: unbounded
Model	mif:participantFeatureRef{2,unbounded}
Children	mif:participantFeatureRef
Instance	<mif:bindingFeatures xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:participantFeatureRef>{2,unbounded}</mif:participantFeatureRef> </mif:bindingFeatures>
Source	<xs:element name="bindingFeatures" type="mif:bindingFeatures" maxOccurs="unbounded"/>

Element mif:bindingFeatures / mif:participantFeatureRef

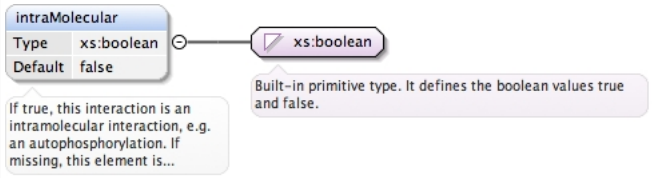
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 2 maxOccurs: unbounded
Source	<xs:element name="participantFeatureRef" type="xs:int" minOccurs="2" maxOccurs="unbounded"/>

Element mif:abstractInteraction / mif:interactionType

Namespace	http://psi.hupo.org/mi/mif300
Annotations	External controlled vocabulary characterising the interaction type, for example "physical interaction".
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:interactionType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:interactionType>
Source	<xs:element name="interactionType" type="mif:cvType" minOccurs="0"> <xs:annotation>

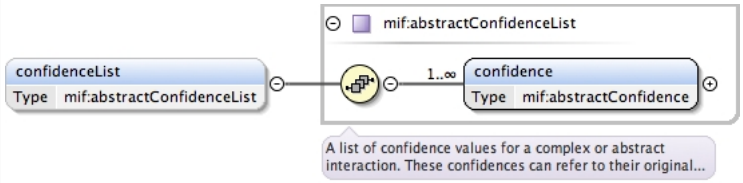
```
    <xs:documentation>External controlled vocabulary characterising the interaction type, for
 example "physical interaction".</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element mif:abstractInteraction / mif:intraMolecular

Namespace	http://psi.hupo.org/mi/mif300
Annotations	If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is assumed to be false.
Diagram	
Type	xs:boolean
Properties	content: simple minOccurs: 0 default: false

Source	`<xs:element name="intraMolecular" type="xs:boolean" default="false" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is assumed to be false.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

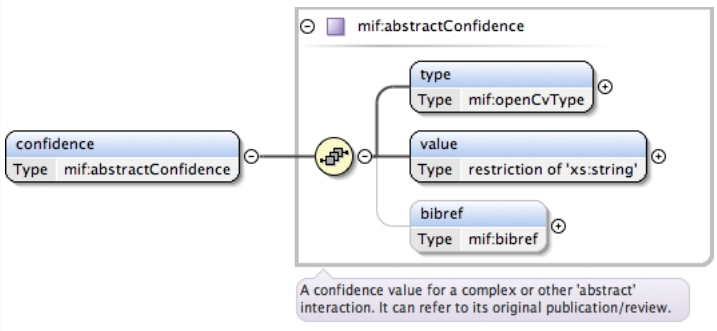
Element mif:abstractInteraction / mif:confidenceList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractConfidenceList
Properties	content: complex minOccurs: 0
Model	mif:confidence+
Children	mif:confidence

Instance	`<mif:confidenceList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:confidence>{1,unbounded}</mif:confidence>`
	`</mif:confidenceList>`

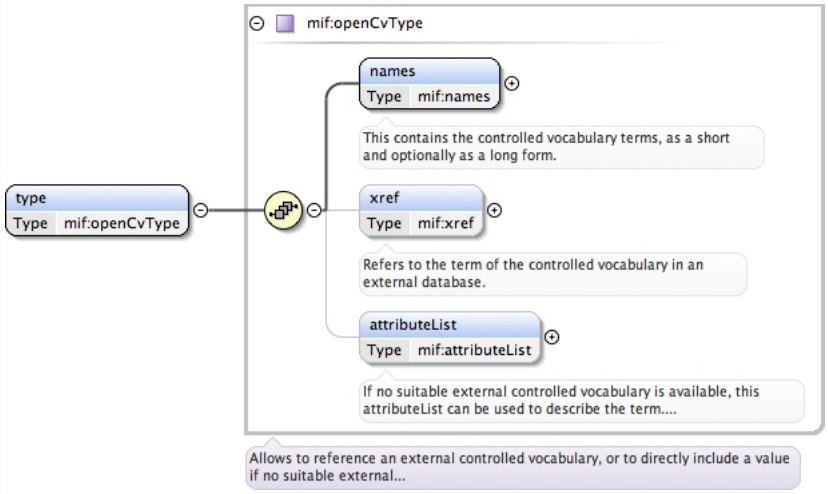
Source	`<xs:element name="confidenceList" type="mif:abstractConfidenceList" minOccurs="0"/>`

Element mif:abstractConfidenceList / mif:confidence

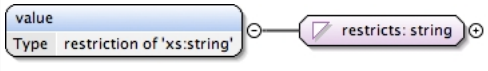
Namespace	http://psi.hupo.org/mi/mif300
Diagram	

Type	mif:abstractConfidence
Properties	content: complex maxOccurs: unbounded
Model	mif:type , mif:value , mif:bibref{0,1}
Children	mif:bibref, mif:type, mif:value
Instance	<mif:confidence xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:type>{1,1}</mif:type> <mif:value>{1,1}</mif:value> <mif:bibref>{0,1}</mif:bibref> </mif:confidence>
Source	<xs:element name="confidence" type="mif:abstractConfidence" maxOccurs="unbounded"/>

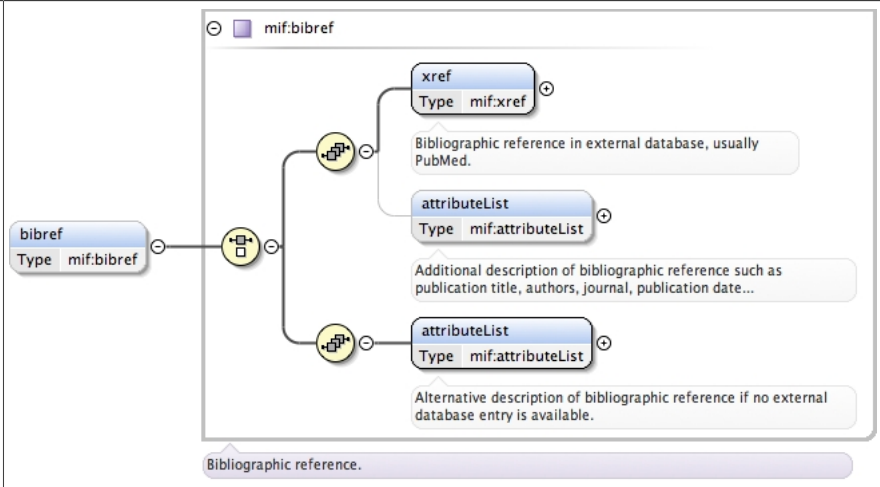
Element mif:abstractConfidence / mif:type

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:openCvType
Properties	content: complex
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref
Instance	<mif:type xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{0,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> </mif:type>
Source	<xs:element name="type" type="mif:openCvType"/>

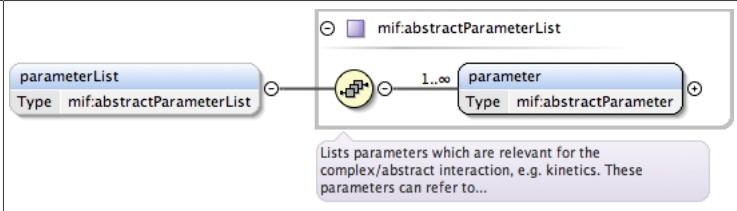
Element mif:abstractConfidence / mif:value

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	restriction of xs:string
Properties	content: simple
Facets	minLength 1
Source	<xs:element name="value"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:element>

Element mif:abstractConfidence / mif:bibref

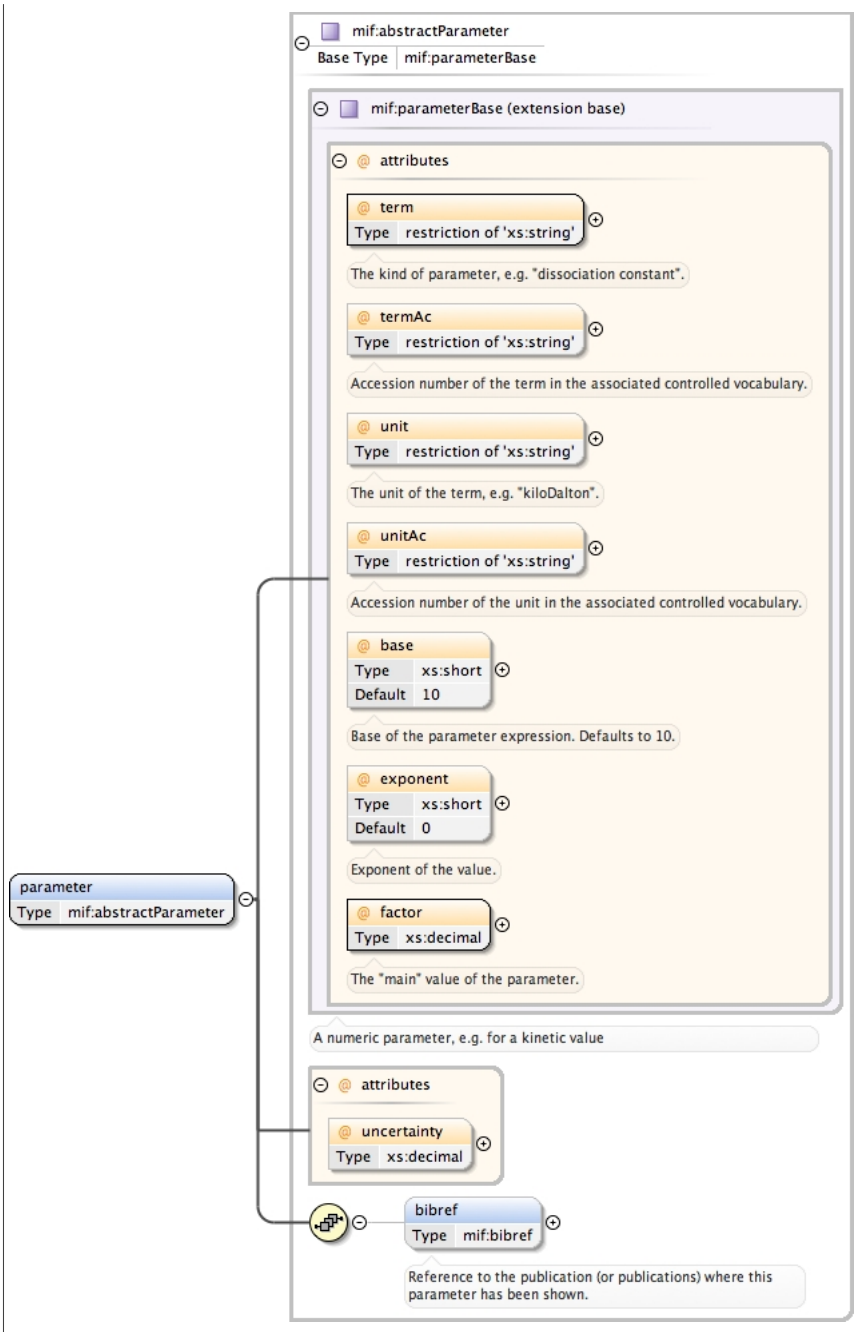
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:bibref
Properties	content: complex minOccurs: 0
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref
Instance	<mif:bibref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:xref>{1,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> <mif:attributeList>{1,1}</mif:attributeList> </mif:bibref>
Source	<xs:element name="bibref" type="mif:bibref" minOccurs="0"/>

Element mif:abstractInteraction / mif:parameterList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:abstractParameterList
Properties	content: complex minOccurs: 0
Model	mif:parameter+
Children	mif:parameter
Instance	<mif:parameterList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="">{1,unbounded} mif:parameter> </mif:parameterList>
Source	<xs:element name="parameterList" type="mif:abstractParameterList" minOccurs="0"/>

Element mif:abstractParameterList / mif:parameter

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	mif:abstractParameter
Type hierarchy	• mif:parameterBase • mif:abstractParameter
Properties	content: complex maxOccurs: unbounded
Model	mif:bibref{0,1}
Children	mif:bibref

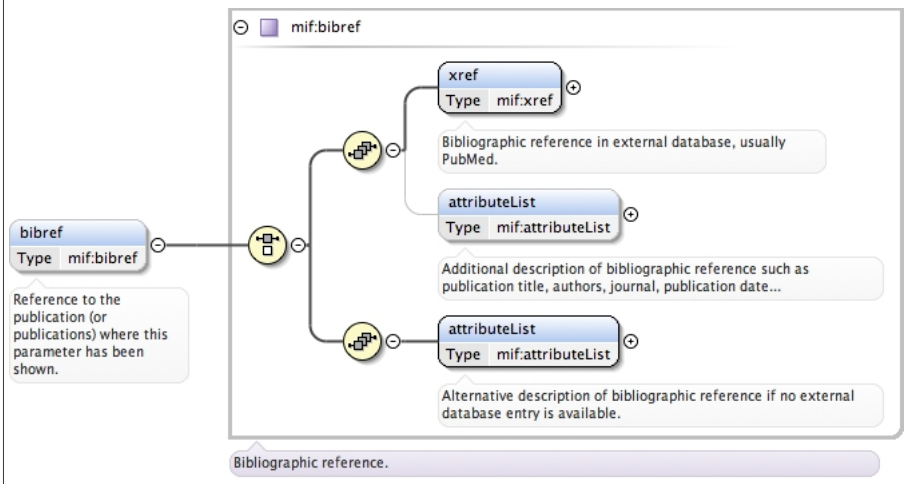
Instance	`<mif:parameter base="10" exponent="0" factor="" term="" termAc="" uncertainty="" unit="" unitAc="" xmlns:mif="http psi.hupo.org/mi/mif300">`
	`  <mif:bibref>{0,1}</mif:bibref>`
	`</mif:parameter>`

Attributes

QName	Type	Fixed	Default	Use
base	xs:short		10	optional
	Base of the parameter expression. Defaults to 10.			

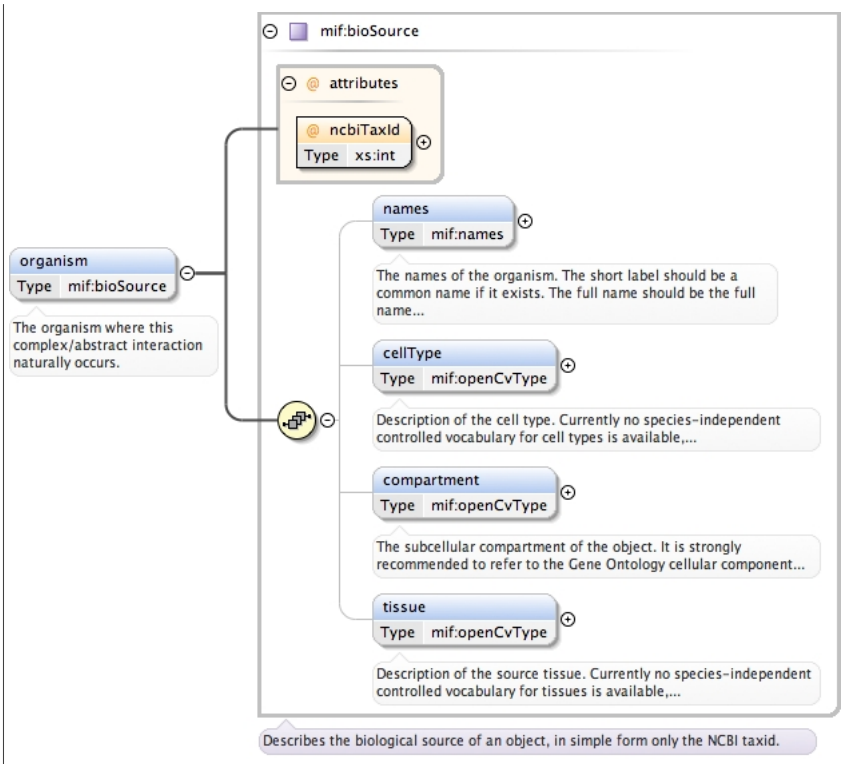
	QName	Type	Fixed	Default	Use
	exponent	xs:short		0	optional
		Exponent of the value.			
	factor	xs:decimal			required
		The "main" value of the parameter.			
	term	restriction of xs:string			required
		The kind of parameter, e.g. "dissociation constant".			
	termAc	restriction of xs:string			optional
		Accession number of the term in the associated controlled vocabulary.			
	uncertainty	xs:decimal			optional
	unit	restriction of xs:string			optional
		The unit of the term, e.g. "kiloDalton".			
	unitAc	restriction of xs:string			optional
		Accession number of the unit in the associated controlled vocabulary.			
Source	<xs:element name="parameter" type="mif:abstractParameter" maxOccurs="unbounded"/>				

Element mif:abstractParameter / mif:bibref

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Reference to the publication (or publications) where this parameter has been shown.
Diagram	
Type	mif:bibref
Properties	content: complex minOccurs: 0
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref
Instance	<mif:bibref xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:xref>{1,1}</mif:xref> <mif:attributeList>{0,1}</mif:attributeList> <mif:attributeList>{1,1}</mif:attributeList> </mif:bibref>
Source	<xs:element name="bibref" type="mif:bibref" minOccurs="0"> <xs:annotation> <xs:documentation>Reference to the publication (or publications) where this parameter has been shown.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:organism

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The organism where this complex/abstract interaction naturally occurs.

Diagram	
Type	mif:bioSource
Properties	content: complex minOccurs: 0
Model	mif:names{0,1} , mif:cellType{0,1} , mif:compartment{0,1} , mif:tissue{0,1}
Children	mif:cellType, mif:compartment, mif:names, mif:tissue

Instance	`<mif:organism ncbiTaxId="" xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{0,1}</mif:names>`
	`  <mif:cellType>{0,1}</mif:cellType>`
	`  <mif:compartment>{0,1}</mif:compartment>`
	`  <mif:tissue>{0,1}</mif:tissue>`
	`</mif:organism>`

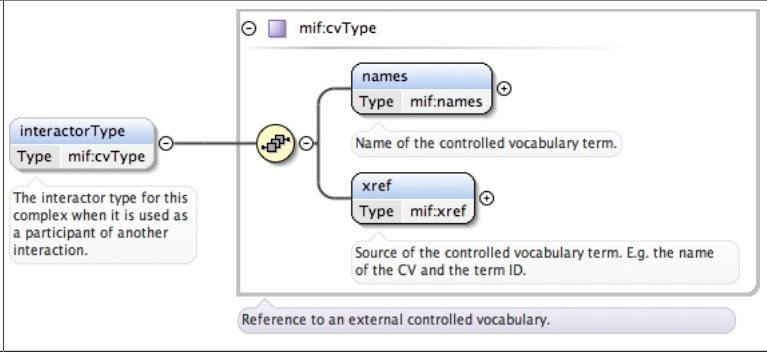
Attributes

QName	Type	Fixed	Default	Use
ncbiTaxId	xs:int			required

Source

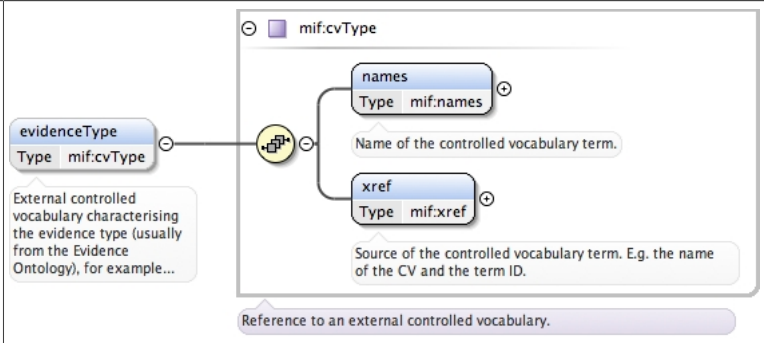
```
<xs:element name="organism" type="mif:bioSource" minOccurs="0">
  <xs:annotation>
    <xs:documentation>The organism where this complex/abstract interaction naturally occurs.</
xs:documentation>
  </xs:annotation>
</xs:element>
```

Element `mif:abstractInteraction / mif:interactorType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The interactor type for this complex when it is used as a participant of another interaction.
Diagram	

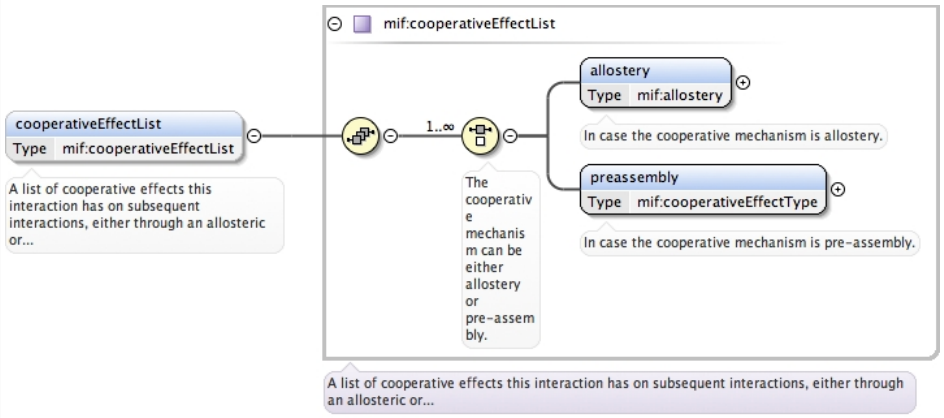
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:interactorType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:interactorType>
Source	<xs:element name="interactorType" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>The interactor type for this complex when it is used as a participant of another interaction.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:evidenceType

Namespace	http://psi.hupo.org/mi/mif300
Annotations	External controlled vocabulary characterising the evidence type (usually from the Evidence Ontology), for example "physical interaction evidence, inferred from literature".
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:evidenceType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:evidenceType>
Source	<xs:element name="evidenceType" type="mif:cvType" minOccurs="0"> <xs:annotation> <xs:documentation>External controlled vocabulary characterising the evidence type (usually from the Evidence Ontology), for example "physical interaction evidence, inferred from literature".</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:cooperativeEffectList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of cooperative effects this interaction has on subsequent interactions, either through an allosteric or pre-assembly effect.

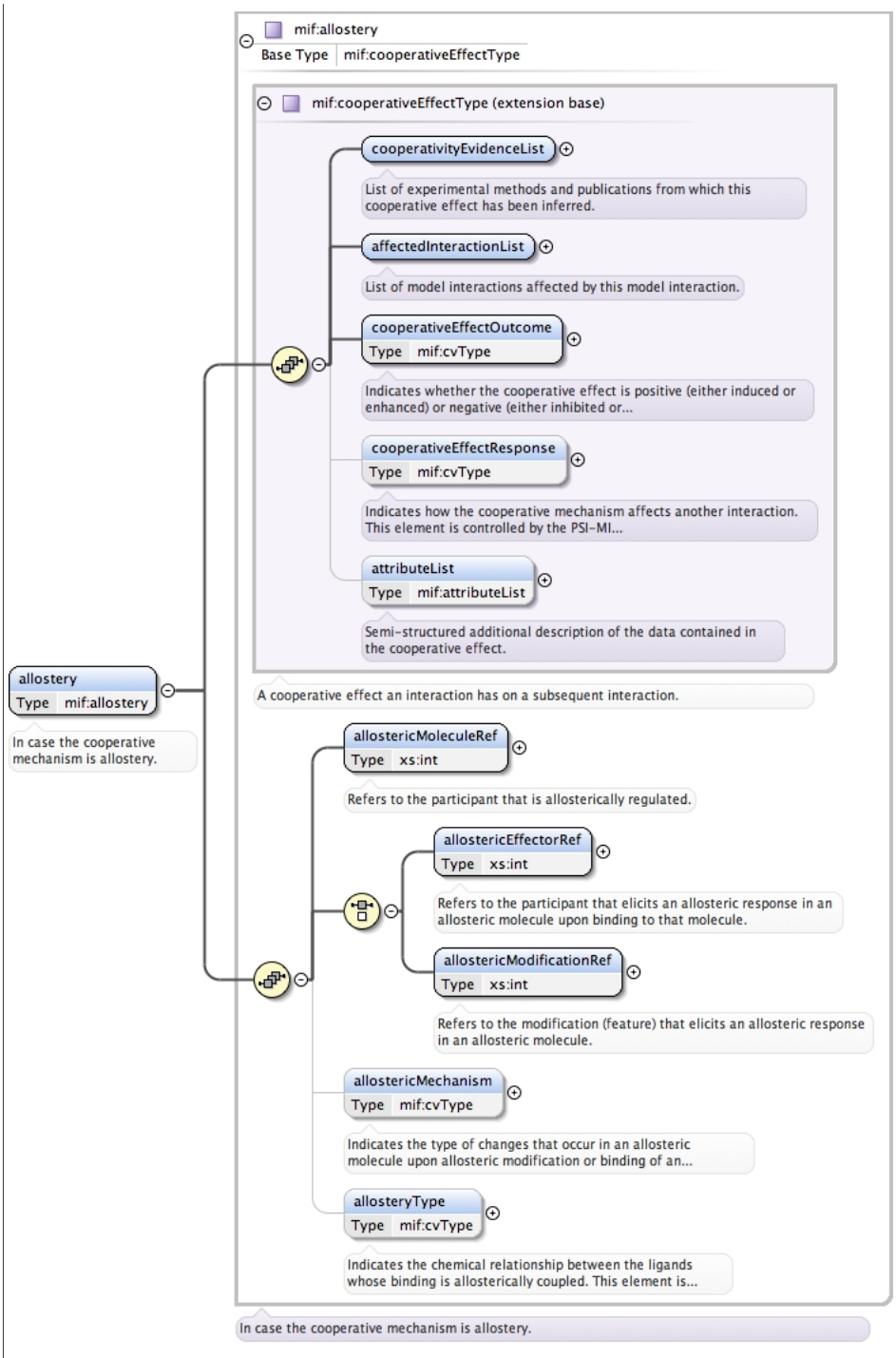
Diagram	
Type	mif:cooperativeEffectList
Properties	content: complex minOccurs: 0
Model	(mif:allostery | mif:preassembly)
Children	mif:allostery, mif:preassembly

Instance	`<mif:cooperativeEffectList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:allostery>{1,1}</mif:allostery>`
	`  <mif:preassembly>{1,1}</mif:preassembly>`
	`</mif:cooperativeEffectList>`

Source	`<xs:element name="cooperativeEffectList" type="mif:cooperativeEffectList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>A list of cooperative effects this interaction has on subsequent interactions, either through an allosteric or pre-assembly effect.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:cooperativeEffectList / mif:allostery`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	In case the cooperative mechanism is allostery.

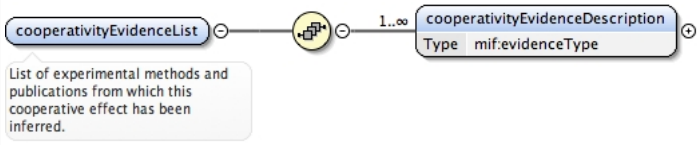
Diagram	
Type	mif:allostery
Type hierarchy	• mif:cooperativeEffectType • mif:allostery
Properties	content: complex
Model	mif:cooperativityEvidenceList , mif:affectedInteractionList , mif:cooperativeEffectOutcome , mif:cooperativeEffectResponse{0,1} , mif:attributeList{0,1} , mif:allostericMoleculeRef , (mif:allostericEffectorRef | mif:allostericModificationRef) , mif:allostericMechanism{0,1} , mif:allosteryType{0,1}
Children	mif:affectedInteractionList, mif:allostericEffectorRef, mif:allostericMechanism, mif:allostericModificationRef, mif:allostericMoleculeRef, mif:allosteryType, mif:attributeList, mif:cooperativeEffectOutcome, mif:cooperativeEffectResponse, mif:cooperativityEvidenceList
Instance	<mif:allostery xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:cooperativityEvidenceList>{1,1}</mif:cooperativityEvidenceList> <mif:affectedInteractionList>{1,1}</mif:affectedInteractionList>

```
  <mif:cooperativeEffectOutcome>{1,1}</mif:cooperativeEffectOutcome>
  <mif:cooperativeEffectResponse>{0,1}</mif:cooperativeEffectResponse>
  <mif:attributeList>{0,1}</mif:attributeList>
  <mif:allostericMoleculeRef>{1,1}</mif:allostericMoleculeRef>
  <mif:allostericEffectorRef>{1,1}</mif:allostericEffectorRef>
  <mif:allostericModificationRef>{1,1}</mif:allostericModificationRef>
  <mif:allostericMechanism>{0,1}</mif:allostericMechanism>
  <mif:allosteryType>{0,1}</mif:allosteryType>
</mif:allostery>
```

Source

```
<xs:element name="allostery" type="mif:allostery">
  <xs:annotation>
    <xs:documentation>In case the cooperative mechanism is allostery.</xs:documentation>
  </xs:annotation>
</xs:element>
```

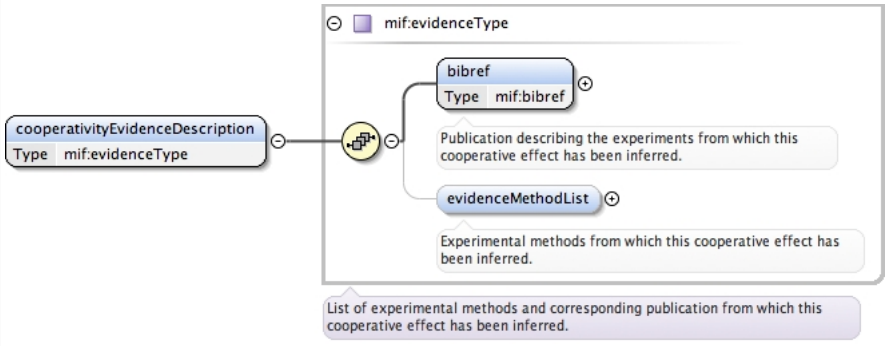
Element mif:cooperativeEffectType / mif:cooperativityEvidenceList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of experimental methods and publications from which this cooperative effect has been inferred.
Diagram	
Properties	content: complex
Model	mif:cooperativityEvidenceDescription+
Children	mif:cooperativityEvidenceDescription

Instance	`<mif:cooperativityEvidenceList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:cooperativityEvidenceDescription>{1,unbounded}</mif:cooperativityEvidenceDescription>`
	`</mif:cooperativityEvidenceList>`

Source	`<xs:element name="cooperativityEvidenceList">`
	`  <xs:annotation>`
	`  <xs:documentation>List of experimental methods and publications from which this cooperative effect has been inferred.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:complexType>`
	`  <xs:sequence>`
	`  <xs:element name="cooperativityEvidenceDescription" type="mif:evidenceType" minOccurs="1" maxOccurs="unbounded">`
	`  </xs:element>`
	`  </xs:sequence>`
	`  </xs:complexType>`
	`</xs:element>`

Element mif:cooperativeEffectType / mif:cooperativityEvidenceList / mif:cooperativityEvidenceDescription

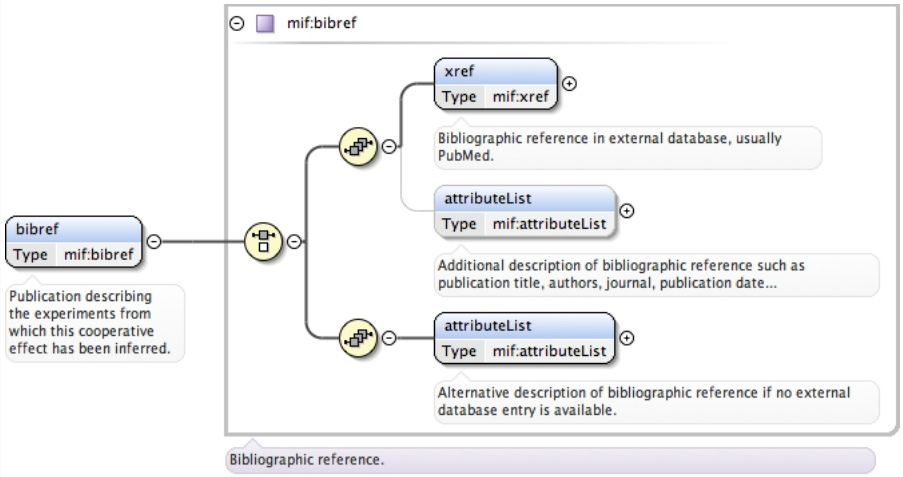
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:evidenceType
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	mif:bibref , mif:evidenceMethodList{0,1}

Children	mif:bibref, mif:evidenceMethodList

Instance	`<mif:cooperativityEvidenceDescription xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:bibref>{1,1}</mif:bibref>`
	`  <mif:evidenceMethodList>{0,1}</mif:evidenceMethodList>`
	`</mif:cooperativityEvidenceDescription>`

Source	`<xs:element name="cooperativityEvidenceDescription" type="mif:evidenceType" minOccurs="1"`
	` maxOccurs="unbounded">`
	`</xs:element>`

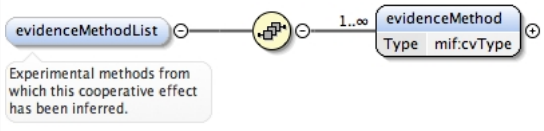
Element `mif:evidenceType / mif:bibref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Publication describing the experiments from which this cooperative effect has been inferred.`
Diagram	
Type	mif:bibref
Properties	content: `complex` minOccurs: `1` maxOccurs: `1`
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref

Instance	`<mif:bibref xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:xref>{1,1}</mif:xref>`
	`  <mif:attributeList>{0,1}</mif:attributeList>`
	`  <mif:attributeList>{1,1}</mif:attributeList>`
	`</mif:bibref>`

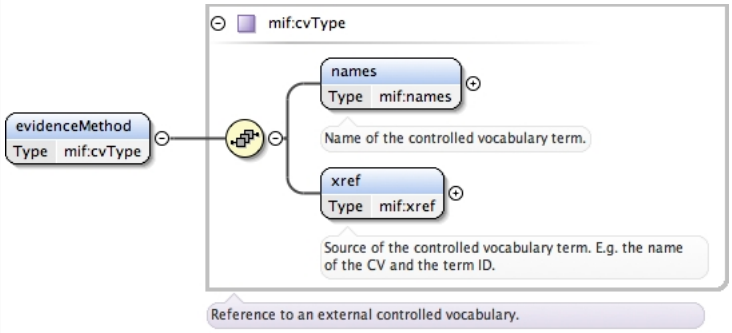
Source	`<xs:element name="bibref" type="mif:bibref" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Publication describing the experiments from which this cooperative effect has`
	` been inferred.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element `mif:evidenceType / mif:evidenceMethodList`

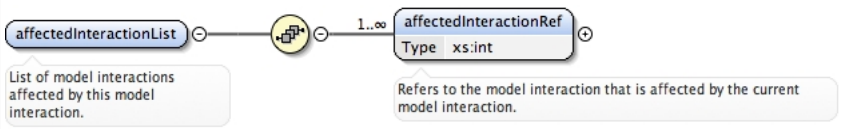
Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Experimental methods from which this cooperative effect has been inferred.`
Diagram	
Properties	content: `complex` minOccurs: `0`
Model	mif:evidenceMethod+
Children	mif:evidenceMethod
Instance	`<mif:evidenceMethodList xmlns:mif="http://psi.hupo.org/mi/mif300">`

	<mif:evidenceMethod>{1,unbounded}</mif:evidenceMethod> </mif:evidenceMethodList>
Source	<xs:element name="evidenceMethodList" minOccurs="0"> <xs:annotation> <xs:documentation>Experimental methods from which this cooperative effect has been inferred.</ xs:documentation> </xs:annotation> <xs:complexType> <xs:sequence> <xs:element name="evidenceMethod" type="mif:cvType" minOccurs="1" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType> </xs:element>

Element mif:evidenceType / mif:evidenceMethodList / mif:evidenceMethod

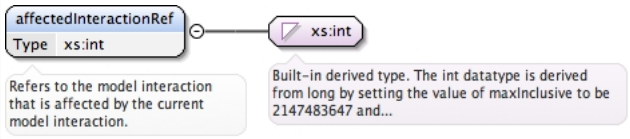
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:evidenceMethod xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:evidenceMethod>
Source	<xs:element name="evidenceMethod" type="mif:cvType" minOccurs="1" maxOccurs="unbounded"/>

Element mif:cooperativeEffectType / mif:affectedInteractionList

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of model interactions affected by this model interaction.
Diagram	
Properties	content: complex
Model	mif:affectedInteractionRef+
Children	mif:affectedInteractionRef
Instance	<mif:affectedInteractionList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:affectedInteractionRef>{1,unbounded}</mif:affectedInteractionRef> </mif:affectedInteractionList>
Source	<xs:element name="affectedInteractionList"> <xs:annotation> <xs:documentation>List of model interactions affected by this model interaction.</ xs:documentation> </xs:annotation> <xs:complexType> <xs:sequence> <xs:element name="affectedInteractionRef" type="xs:int" minOccurs="1" maxOccurs="unbounded">

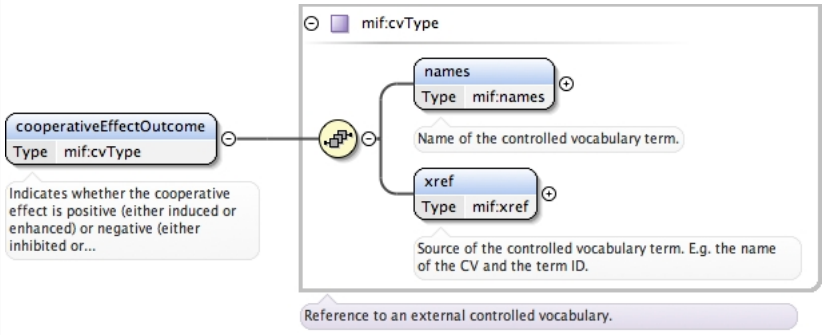
```
        <xs:annotation>
          <xs:documentation>Refers to the model interaction that is affected by the current model
 interaction.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

Element mif:cooperativeEffectType / mif:affectedInteractionList / mif:affectedInteractionRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the model interaction that is affected by the current model interaction.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: unbounded

Source	`<xs:element name="affectedInteractionRef" type="xs:int" minOccurs="1" maxOccurs="unbounded">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the model interaction that is affected by the current model interaction.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:cooperativeEffectType / mif:cooperativeEffectOutcome

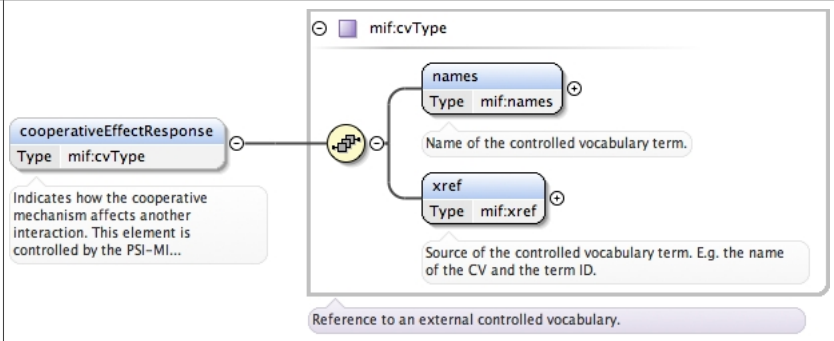
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Indicates whether the cooperative effect is positive (either induced or enhanced) or negative (either inhibited or abrogated). This element is controlled by the PSI-MI controlled vocabulary "cooperative effect outcome" root term, id MI:1153.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 1 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:cooperativeEffectOutcome xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:cooperativeEffectOutcome>`

Source	`<xs:element name="cooperativeEffectOutcome" type="mif:cvType" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Indicates whether the cooperative effect is positive (either induced or enhanced) or negative (either inhibited or abrogated). This element is controlled by the PSI-MI controlled vocabulary "cooperative effect outcome" root term, id MI:1153.</xs:documentation>`

```
  </xs:annotation>
</xs:element>
```

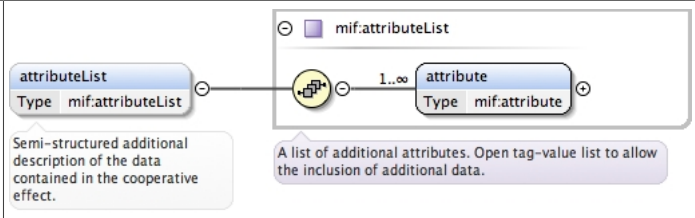
Element mif:cooperativeEffectType / mif:cooperativeEffectResponse

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Indicates how the cooperative mechanism affects another interaction. This element is controlled by the PSI-MI controlled vocabulary "cooperative effect response" root term, id MI:.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:cooperativeEffectResponse xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:cooperativeEffectResponse>`

Source	`<xs:element name="cooperativeEffectResponse" type="mif:cvType" minOccurs="0" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Indicates how the cooperative mechanism affects another interaction. This element is controlled by the PSI-MI controlled vocabulary "cooperative effect response" root term, id MI:.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:cooperativeEffectType / mif:attributeList

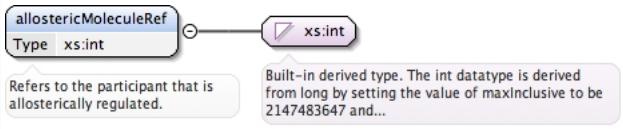
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Semi-structured additional description of the data contained in the cooperative effect.
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute

Instance	`<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute>`
	`</mif:attributeList>`

Source	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0">`
	`  <xs:annotation>`
	`  <xs:documentation>Semi-structured additional description of the data contained in the cooperative effect.</xs:documentation>`

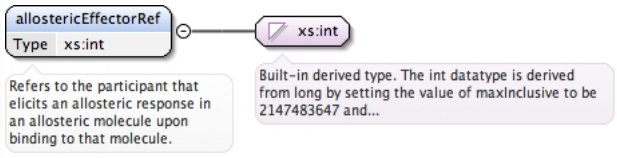
```
  </xs:annotation>
</xs:element>
```

Element mif:allostery / mif:allostericMoleculeRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the participant that is allosterically regulated.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: 1

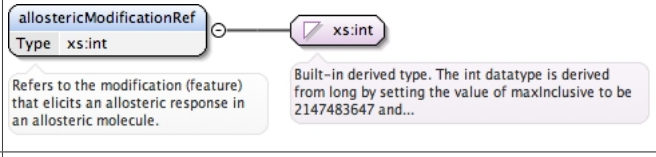
Source	`<xs:element name="allostericMoleculeRef" type="xs:int" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the participant that is allosterically regulated.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:allostery / mif:allostericEffectorRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the participant that elicits an allosteric response in an allosteric molecule upon binding to that molecule.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: 1

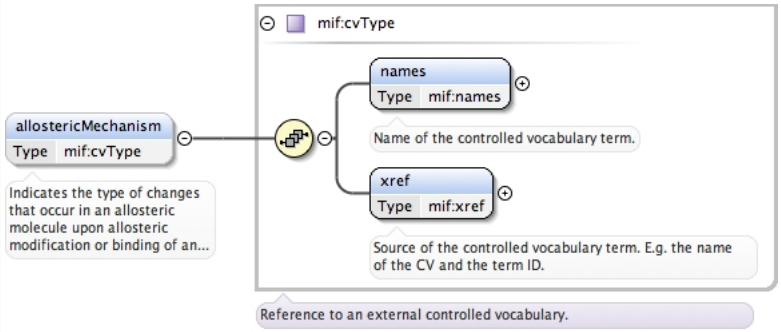
Source	`<xs:element name="allostericEffectorRef" type="xs:int" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the participant that elicits an allosteric response in an allosteric molecule upon binding to that molecule.</xs:documentation>`
	`  </xs:annotation>`
	`</xs:element>`

Element mif:allostery / mif:allostericModificationRef

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to the modification (feature) that elicits an allosteric response in an allosteric molecule.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 maxOccurs: 1
Source	`<xs:element name="allostericModificationRef" type="xs:int" minOccurs="1" maxOccurs="1">` `  <xs:annotation>`

```
    <xs:documentation>Refers to the modification (feature) that elicits an allosteric response in an
 allosteric molecule.</xs:documentation>
  </xs:annotation>
</xs:element>
```

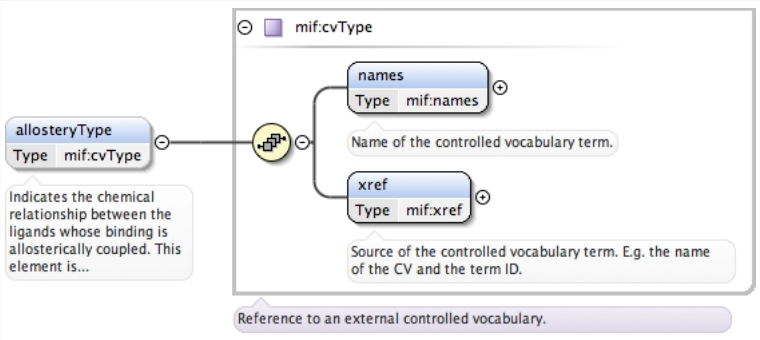
Element mif:allostery / mif:allostericMechanism

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Indicates the type of changes that occur in an allosteric molecule upon allosteric modification or binding of an allosteric effector and result in an allosteric response. This element is controlled by the PSI-MI controlled vocabulary "allosteric mechanism", root term id MI:1164.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref

Instance	`<mif:allostericMechanism xmlns:mif="http://psi.hupo.org/mi/mif300">`
	`  <mif:names>{1,1}</mif:names>`
	`  <mif:xref>{1,1}</mif:xref>`
	`</mif:allostericMechanism>`

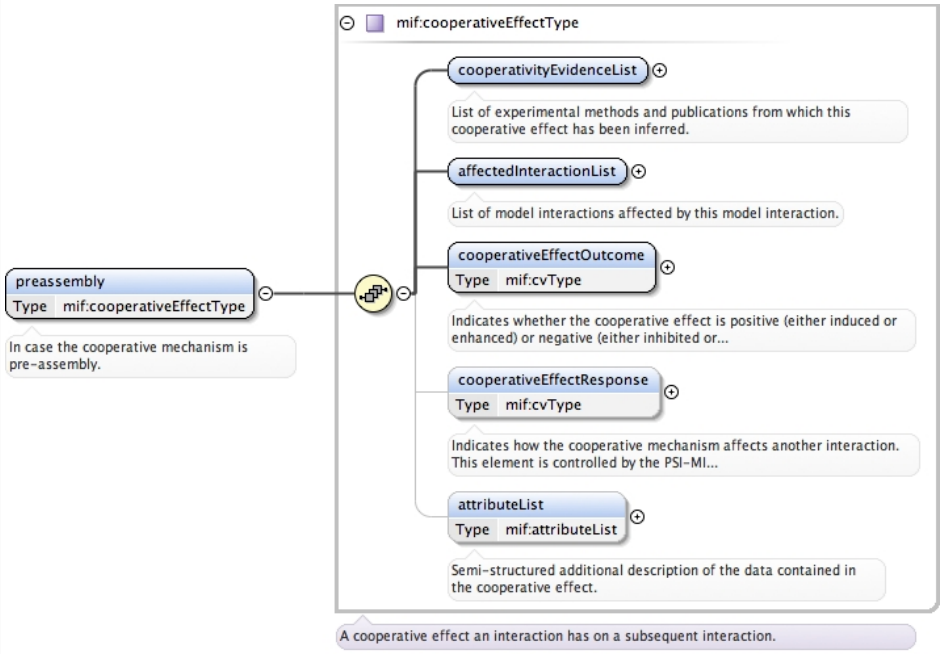
Source	`<xs:element name="allostericMechanism" type="mif:cvType" minOccurs="0" maxOccurs="1">` `  <xs:annotation>` ` <xs:documentation>Indicates the type of changes that occur in an allosteric molecule upon allosteric modification or binding of an allosteric effector and result in an allosteric response. This element is controlled by the PSI-MI controlled vocabulary "allosteric mechanism", root term id MI:1164.</xs:documentation>` ` </xs:annotation>` `</xs:element>`

Element mif:allostery / mif:allosteryType

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Indicates the chemical relationship between the ligands whose binding is allosterically coupled. This element is controlled by the PSI-MI controlled vocabulary "allostery type", root term id MI:1167.
Diagram	
Type	mif:cvType
Properties	content: complex minOccurs: 0

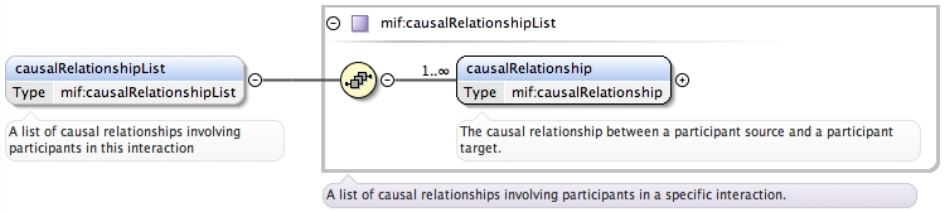
	maxOccurs: 1
Model	mif:names , mif:xref
Children	mif:names, mif:xref
Instance	<mif:allosteryType xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:names>{1,1}</mif:names> <mif:xref>{1,1}</mif:xref> </mif:allosteryType>
Source	<xs:element name="allosteryType" type="mif:cvType" minOccurs="0" maxOccurs="1"> <xs:annotation> <xs:documentation>Indicates the chemical relationship between the ligands whose binding is allosterically coupled. This element is controlled by the PSI-MI controlled vocabulary "allostery type", root term id MI:1167.</xs:documentation> </xs:annotation> </xs:element>

Element mif:cooperativeEffectList / mif:preassembly

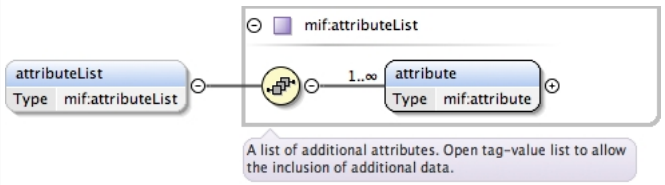
Namespace	http://psi.hupo.org/mi/mif300
Annotations	In case the cooperative mechanism is pre-assembly.
Diagram	
Type	mif:cooperativeEffectType
Properties	content: complex
Model	mif:cooperativityEvidenceList , mif:affectedInteractionList , mif:cooperativeEffectOutcome , mif:cooperativeEffectResponse{0,1} , mif:attributeList{0,1}
Children	mif:affectedInteractionList, mif:attributeList, mif:cooperativeEffectOutcome, mif:cooperativeEffectResponse, mif:cooperativityEvidenceList
Instance	<mif:preassembly xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:cooperativityEvidenceList>{1,1}</mif:cooperativityEvidenceList> <mif:affectedInteractionList>{1,1}</mif:affectedInteractionList> <mif:cooperativeEffectOutcome>{1,1}</mif:cooperativeEffectOutcome> <mif:cooperativeEffectResponse>{0,1}</mif:cooperativeEffectResponse> <mif:attributeList>{0,1}</mif:attributeList> </mif:preassembly>
Source	<xs:element name="preassembly" type="mif:cooperativeEffectType"> <xs:annotation> <xs:documentation>In case the cooperative mechanism is pre-assembly.</xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:causalRelationshipList

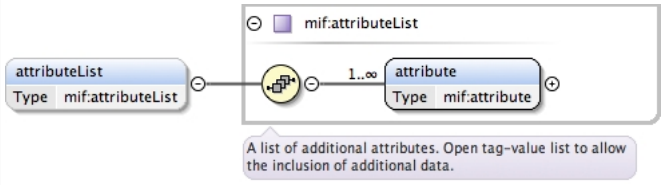
Namespace	http://psi.hupo.org/mi/mif300

Annotations	A list of causal relationships involving participants in this interaction
Diagram	
Type	mif:causalRelationshipList
Properties	content: complex minOccurs: 0
Model	mif:causalRelationship+
Children	mif:causalRelationship
Instance	<mif:causalRelationshipList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:causalRelationship>{1,unbounded}</mif:causalRelationship> </mif:causalRelationshipList>
Source	<xs:element name="causalRelationshipList" type="mif:causalRelationshipList" minOccurs="0"> <xs:annotation> <xs:documentation>A list of causal relationships involving participants in this interaction</ xs:documentation> </xs:annotation> </xs:element>

Element mif:abstractInteraction / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute
Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>

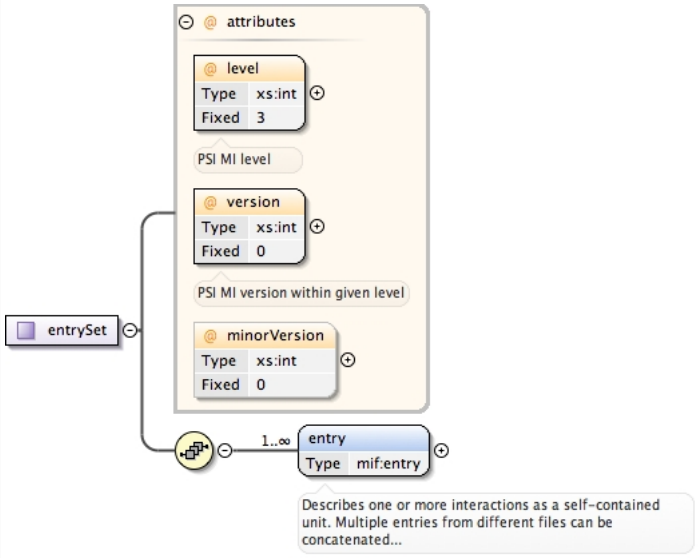
Element mif:entry / mif:attributeList

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	mif:attributeList
Properties	content: complex minOccurs: 0
Model	mif:attribute+
Children	mif:attribute

Instance	<mif:attributeList xmlns:mif="http://psi.hupo.org/mi/mif300"> <mif:attribute name="" nameAc="">{1,unbounded}</mif:attribute> </mif:attributeList>
Source	<xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>

Complex Type(s)

Complex Type `mif:entrySet`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Used by	Element mif:entrySet
Model	mif:entry+
Children	mif:entry

Attributes

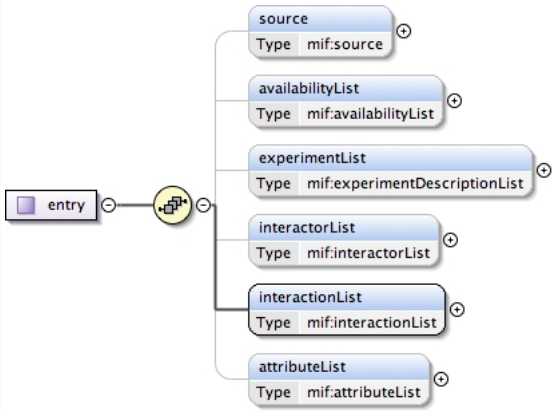
QName	Type	Fixed	Default	Use
level	xs:int	3		required
	PSI MI level			
minorVersion	xs:int	0		optional
version	xs:int	0		required
	PSI MI version within given level			

Source

```
<xs:complexType name="entrySet">
  <xs:sequence>
    <xs:element name="entry" maxOccurs="unbounded" type="mif:entry">
      <xs:annotation>
        <xs:documentation>Describes one or more interactions as a self-contained unit. Multiple
 entries from different files can be concatenated into a single entrySet.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="level" type="xs:int" use="required" fixed="3">
    <xs:annotation>
      <xs:documentation>PSI MI level</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="version" type="xs:int" use="required" fixed="0">
    <xs:annotation>
      <xs:documentation>PSI MI version within given level</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="minorVersion" type="xs:int" use="optional" fixed="0"/>
</xs:complexType>
```

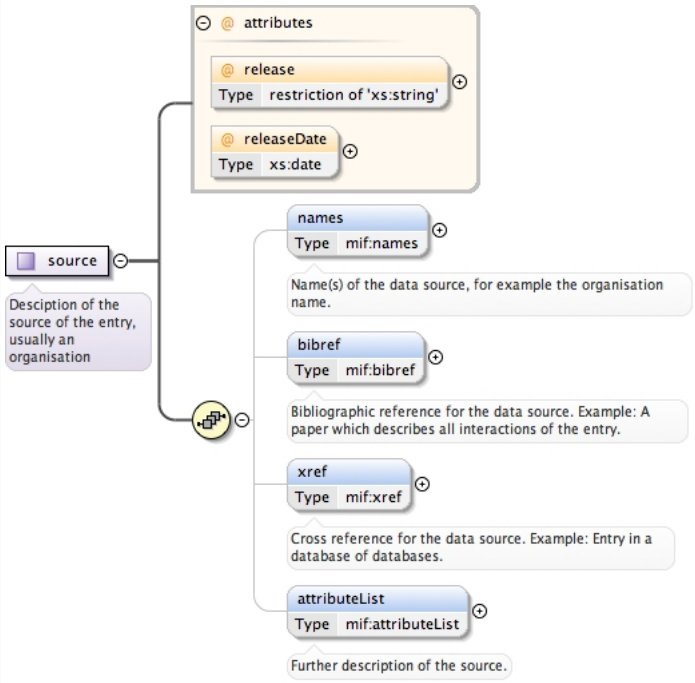
Complex Type `mif:entry`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Used by	Element mif:entrySet/mif:entry
Model	mif:source{0,1} , mif:availabilityList{0,1} , mif:experimentList{0,1} , mif:interactorList{0,1} , mif:interactionList , mif:attributeList{0,1}
Children	mif:attributeList, mif:availabilityList, mif:experimentList, mif:interactionList, mif:interactorList, mif:source

Source	`<xs:complexType name="entry">`
	`  <xs:sequence>`
	`  <xs:element name="source" type="mif:source" minOccurs="0"/>`
	`  <xs:element name="availabilityList" type="mif:availabilityList" minOccurs="0"/>`
	`  <xs:element name="experimentList" type="mif:experimentDescriptionList" minOccurs="0"/>`
	`  <xs:element name="interactorList" type="mif:interactorList" minOccurs="0"/>`
	`  <xs:element name="interactionList" type="mif:interactionList"/>`
	`  <xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:source`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Desciption of the source of the entry, usually an organisation`
Diagram	
Used by	Element mif:entry/mif:source
Model	mif:names{0,1} , mif:bibref{0,1} , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bibref, mif:names, mif:xref

Attributes

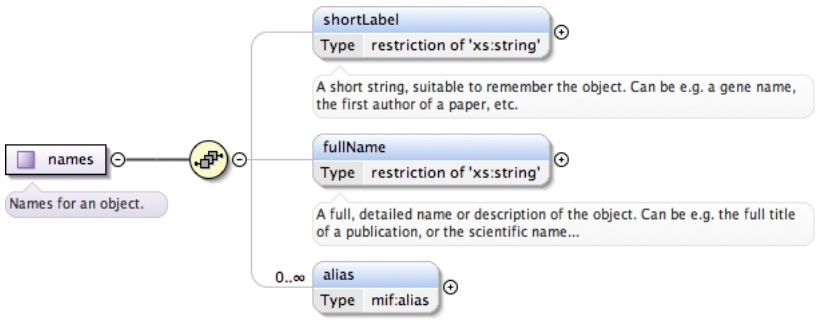
QName	Type	Fixed	Default	Use
release	restriction of xs:string			optional

	QName	Type	Fixed	Default	Use
	releaseDate	xs:date			optional

Source

```
<xs:complexType name="source">
  <xs:annotation>
    <xs:documentation>Desciption of the source of the entry, usually an organisation</
xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Name(s) of the data source, for example the organisation name.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="bibref" type="mif:bibref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Bibliographic reference for the data source. Example: A paper which
 describes all interactions of the entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Cross reference for the data source. Example: Entry in a database of
 databases.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Further description of the source.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="release" use="optional">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="releaseDate" type="xs:date" use="optional"/>
</xs:complexType>
```

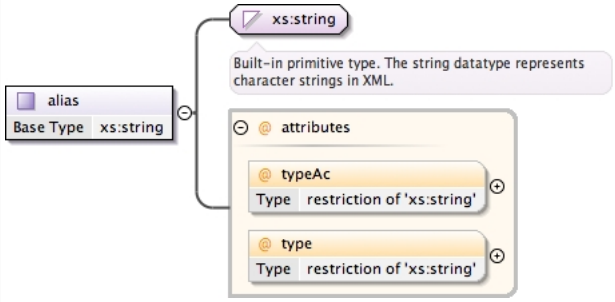
Complex Type `mif:names`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Names for an object.
Diagram	
Used by	Elements mif:abstractFeature/mif:names, mif:abstractInteraction/mif:names, mif:abstractParticipant/mif:names, mif:bioSource/mif:names, mif:cvType/mif:names, mif:experimentDescription/mif:names, mif:feature/mif:names, mif:interaction/mif:names, mif:interactor/mif:names, mif:openCvType/mif:names, mif:participant/mif:names, mif:source/mif:names
Model	mif:shortLabel{0,1} , mif:fullName{0,1} , mif:alias*
Children	mif:alias, mif:fullName, mif:shortLabel
Source	


```
<xs:complexType name="names">
  <xs:annotation>
    <xs:documentation>Names for an object.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="shortLabel" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A short string, suitable to remember the object. Can be e.g. a gene name,
 the first author of a paper, etc.</xs:documentation>
```

```
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="fullName" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A full, detailed name or description of the object. Can be e.g. the full
 title of a publication, or the scientific name of a species.</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="alias" type="mif:alias" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:alias`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	extension of xs:string
Used by	Element mif:names/mif:alias

Attributes

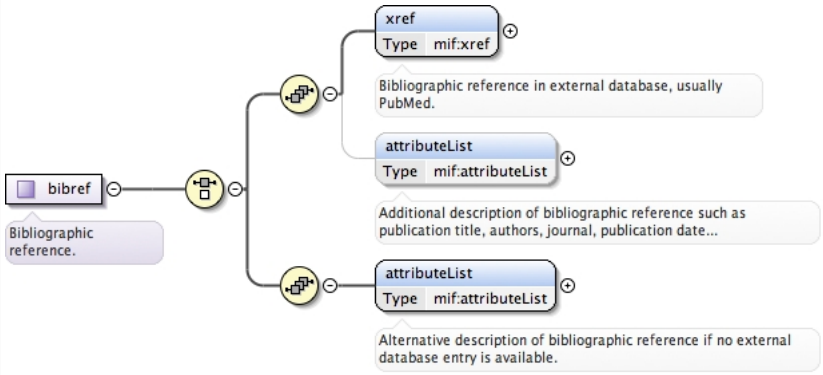
QName	Type	Fixed	Default	Use
type	restriction of xs:string			optional
typeAc	restriction of xs:string			optional

Source

```
<xs:complexType name="alias">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="typeAc" use="optional">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="type" use="optional">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:attribute>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

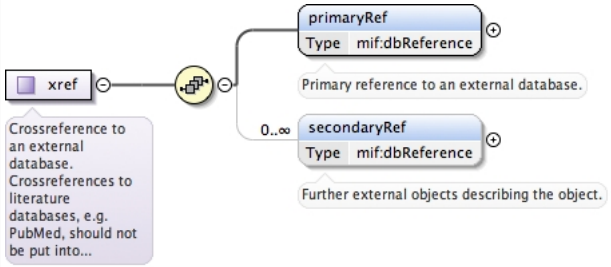
Complex Type `mif:bibref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Bibliographic reference.`

Diagram	
Used by	Elements: mif:abstractConfidence/mif:bibref, mif:abstractParameter/mif:bibref, mif:evidenceType/mif:bibref, mif:experimentDescription/mif:bibref, mif:source/mif:bibref
Model	(mif:xref , mif:attributeList{0,1}) | (mif:attributeList)
Children	mif:attributeList, mif:xref

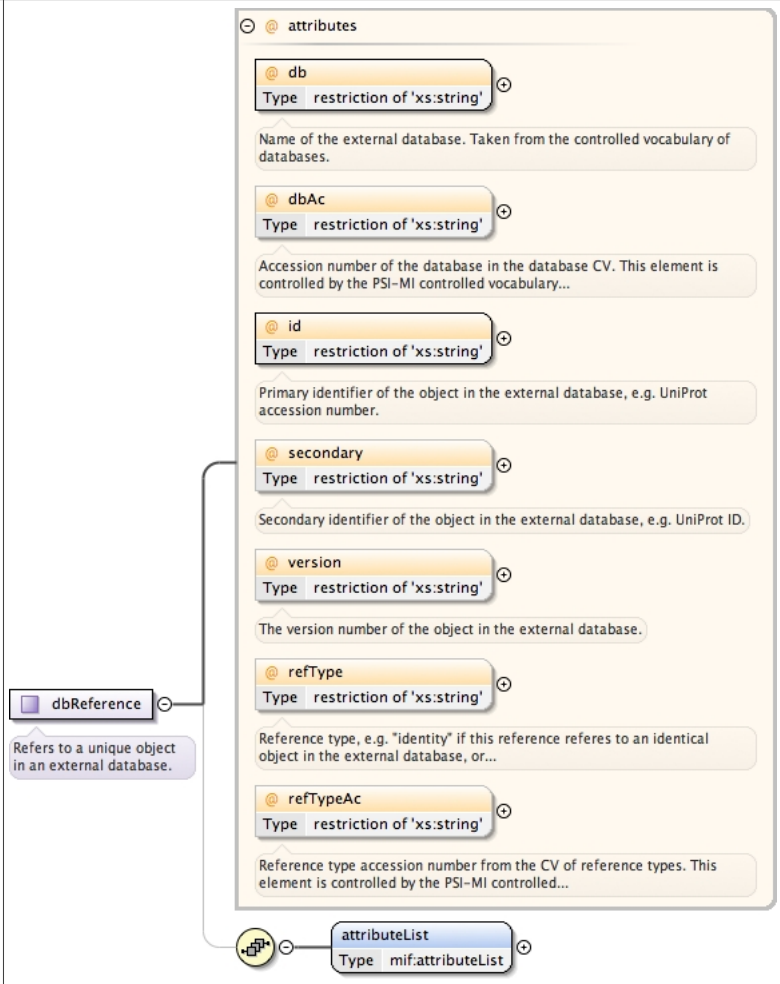
Source	`<xs:complexType name="bibref">`
	`  <xs:annotation>`
	`  <xs:documentation>Bibliographic reference.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:choice minOccurs="1" maxOccurs="1">`
	`  <xs:sequence>`
	`  <xs:element name="xref" type="mif:xref" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Bibliographic reference in external database, usually PubMed.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  <xs:element name="attributeList" type="mif:attributeList" minOccurs="0" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Additional description of bibliographic reference such as publication title, authors, journal, publication date...</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`  <xs:sequence>`
	`  <xs:element name="attributeList" type="mif:attributeList" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Alternative description of bibliographic reference if no external database entry is available.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`  </xs:choice>`
	`</xs:complexType>`

Complex Type `mif:xref`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Crossreference to an external database. Crossreferences to literature databases, e.g. PubMed, should not be put into this structure, but into the bibRef element where possible.
Diagram	
Used by	Elements: mif:abstractFeature/mif:xref, mif:abstractInteraction/mif:xref, mif:abstractParticipant/mif:xref, mif:bibref/mif:xref, mif:cvType/mif:xref, mif:experimentDescription/mif:xref, mif:feature/mif:xref, mif:interaction/mif:xref, mif:interactor/mif:xref, mif:openCvType/mif:xref, mif:participant/mif:xref, mif:resultingSequenceType/mif:xref, mif:source/mif:xref
Model	mif:primaryRef , mif:secondaryRef*

Children	mif:primaryRef, mif:secondaryRef
Source	<xs:complexType name="xref"> <xs:annotation> <xs:documentation>Crossreference to an external database. Crossreferences to literature databases, e.g. PubMed, should not be put into this structure, but into the bibRef element where possible.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="primaryRef" type="mif:dbReference"> <xs:annotation> <xs:documentation>Primary reference to an external database.</xs:documentation> </xs:annotation> </xs:element> <xs:element name="secondaryRef" type="mif:dbReference" minOccurs="0" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>Further external objects describing the object.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType>

Complex Type `mif:dbReference`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to a unique object in an external database.
Diagram	
Used by	Elements mif:xref/mif:primaryRef, mif:xref/mif:secondaryRef
Model	mif:attributeList
Children	mif:attributeList

Attributes

QName	Type	Fixed	Default	Use
db	restriction of xs:string			required

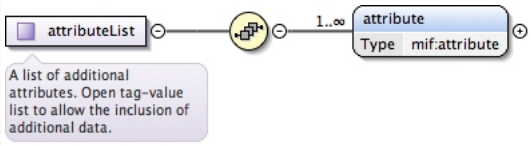
QName	Type	Fixed	Default	Use
	Name of the external database. Taken from the controlled vocabulary of databases.			
dbAc	restriction of xs:string			optional
	Accession number of the database in the database CV. This element is controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.			
id	restriction of xs:string			required
	Primary identifier of the object in the external database, e.g. UniProt accession number.			
refType	restriction of xs:string			optional
	Reference type, e.g. "identity" if this reference referes to an identical object in the external database, or "see-also" for additional information. Controlled by CV.			
refTypeAc	restriction of xs:string			optional
	Reference type accession number from the CV of reference types. This element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.			
secondary	restriction of xs:string			optional
	Secondary identifier of the object in the external database, e.g. UniProt ID.			
version	restriction of xs:string			optional
	The version number of the object in the external database.			

Source

```
<xs:complexType name="dbReference">
  <xs:annotation>
    <xs:documentation>Refers to a unique object in an external database.</xs:documentation>
  </xs:annotation>
  <xs:sequence minOccurs="0">
    <xs:element name="attributeList" type="mif:attributeList"/>
  </xs:sequence>
  <xs:attribute name="db" use="required">
    <xs:annotation>
      <xs:documentation>Name of the external database. Taken from the controlled vocabulary of
 databases.</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="dbAc" use="optional">
    <xs:annotation>
      <xs:documentation>Accession number of the database in the database CV. This element is
 controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="id" use="required">
    <xs:annotation>
      <xs:documentation>Primary identifier of the object in the external database, e.g. UniProt
 accession number.</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="secondary" use="optional">
    <xs:annotation>
      <xs:documentation>Secondary identifier of the object in the external database, e.g. UniProt
 ID.</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
```

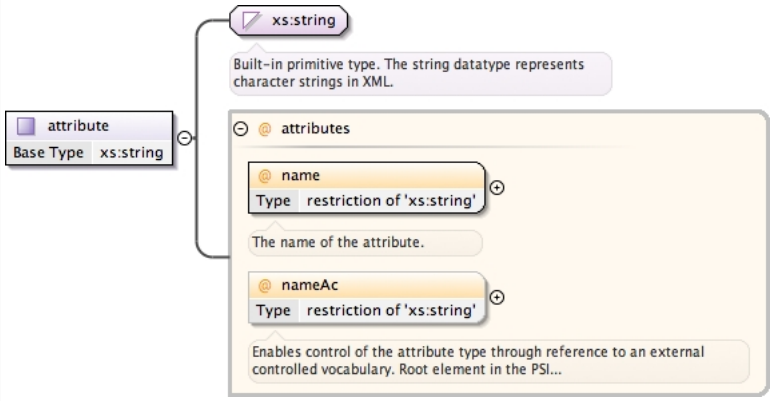
```
  </xs:attribute>
  <xs:attribute name="version" use="optional">
    <xs:annotation>
      <xs:documentation>The version number of the object in the external database.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="refType" use="optional">
    <xs:annotation>
      <xs:documentation>Reference type, e.g. "identity" if this reference referes to an identical
 object in the external database, or "see-also" for additional information. Controlled by CV.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="refTypeAc" use="optional">
    <xs:annotation>
      <xs:documentation>Reference type accession number from the CV of reference types. This
 element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
</xs:complexType>
```

Complex Type `mif:attributeList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of additional attributes. Open tag-value list to allow the inclusion of additional data.
Diagram	
Used by	Elements: mif:abstractFeature/mif:attributeList, mif:abstractInteraction/mif:attributeList, mif:abstractParticipant/mif:attributeList, mif:bibref/mif:attributeList, mif:cooperativeEffectType/mif:attributeList, mif:dbReference/mif:attributeList, mif:entry/mif:attributeList, mif:experimentDescription/mif:attributeList, mif:feature/mif:attributeList, mif:interaction/mif:attributeList, mif:interactor/mif:attributeList, mif:openCvType/mif:attributeList, mif:participant/mif:attributeList, mif:source/mif:attributeList
Model	mif:attribute+
Children	mif:attribute
Source	<xs:complexType name="attributeList"> <xs:annotation> <xs:documentation>A list of additional attributes. Open tag-value list to allow the inclusion of additional data.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="attribute" type="mif:attribute" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:attribute`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	extension of xs:string
Used by	Element mif:attributeList/mif:attribute

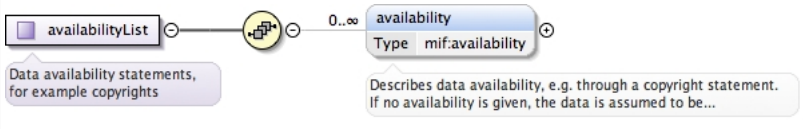
Attributes

QName	Type	Fixed	Default	Use
name	restriction of xs:string			required
	The name of the attribute.			
nameAc	restriction of xs:string			optional
	Enables control of the attribute type through reference to an external controlled vocabulary. Root element in the PSI MI CV is MI:0590.			

Source

```
<xs:complexType name="attribute">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="name" use="required">
        <xs:annotation>
          <xs:documentation>The name of the attribute.</xs:documentation>
        </xs:annotation>
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="nameAc" use="optional">
        <xs:annotation>
          <xs:documentation>Enables control of the attribute type through reference to an external
 controlled vocabulary. Root element in the PSI MI CV is MI:0590.</xs:documentation>
        </xs:annotation>
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:attribute>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

Complex Type `mif:availabilityList`

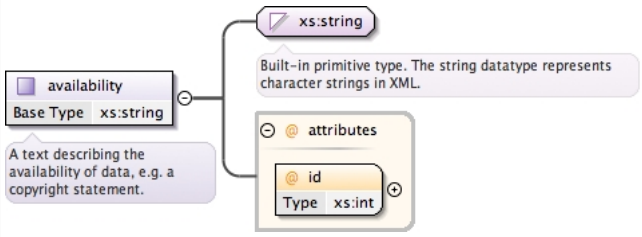
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Data availability statements, for example copyrights
Diagram	
Used by	Element mif:entry/mif:availabilityList
Model	mif:availability*
Children	mif:availability

Source

```
<xs:complexType name="availabilityList">
  <xs:annotation>
    <xs:documentation>Data availability statements, for example copyrights</xs:documentation>
```

```
  </xs:annotation>
  <xs:sequence>
    <xs:element name="availability" type="mif:availability" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Describes data availability, e.g. through a copyright statement. If no
 availability is given, the data is assumed to be freely available.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:availability`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A text describing the availability of data, e.g. a copyright statement.
Diagram	
Type	extension of xs:string
Used by	Elements mif:availabilityList/mif:availability, mif:interaction/mif:availability

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

Source

```
<xs:complexType name="availability">
  <xs:annotation>
    <xs:documentation>A text describing the availability of data, e.g. a copyright statement.</
xs:documentation>
  </xs:annotation>
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="id" type="xs:int" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

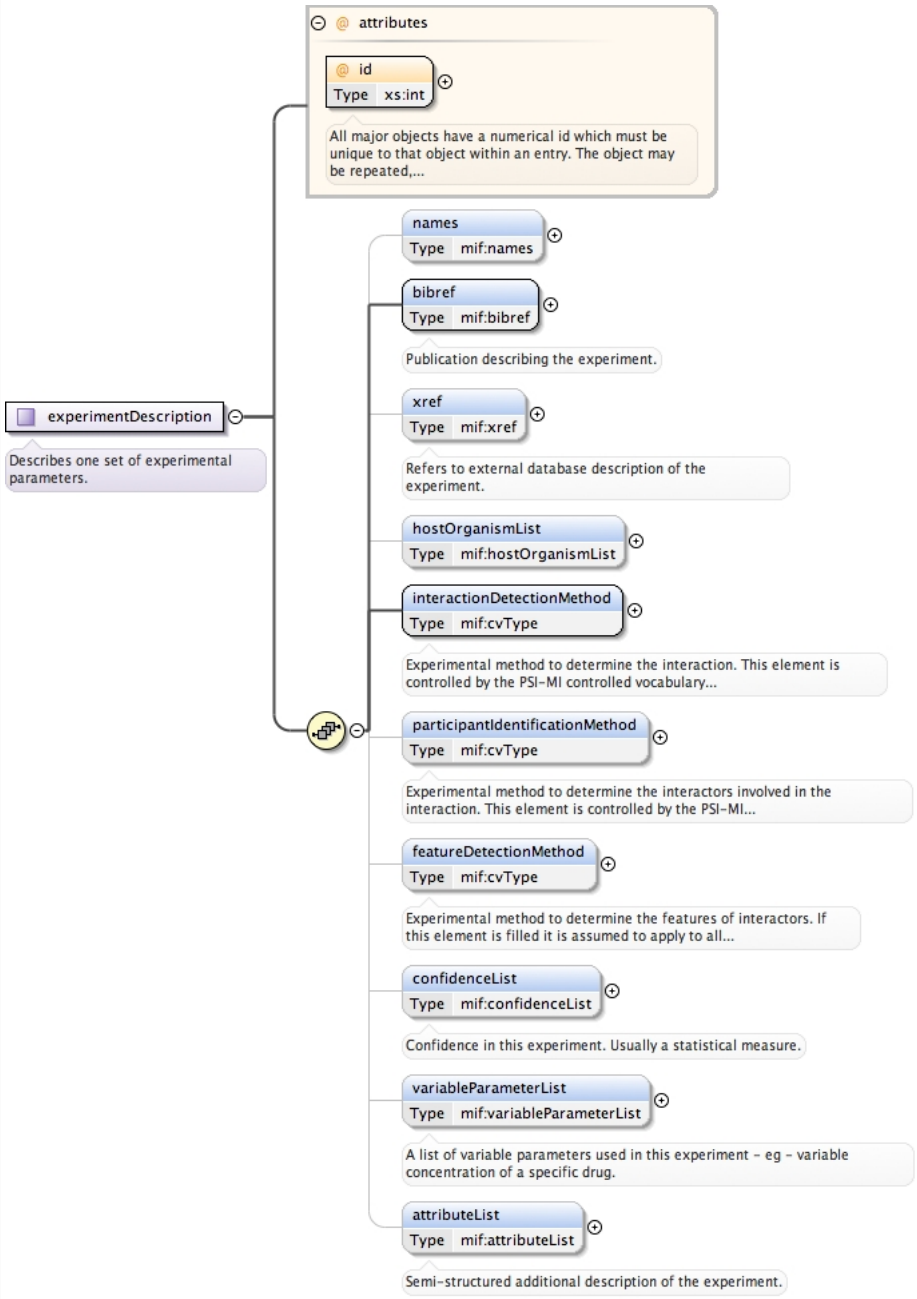
Complex Type `mif:experimentDescriptionList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	All experiments in which the interactions of this entry have been determined
Diagram	
Used by	Element mif:entry/mif:experimentList
Model	mif:experimentDescription*
Children	mif:experimentDescription

Source

```
<xs:complexType name="experimentDescriptionList">
  <xs:annotation>
    <xs:documentation>All experiments in which the interactions of this entry have been determined</
xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="experimentDescription" type="mif:experimentDescription" minOccurs="0"
 maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Describes one set of experimental parameters, usually associated with a
 single publication.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:experimentDescription`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`Describes one set of experimental parameters.`
Diagram	
Used by	Elements: mif:experimentDescriptionList/mif:experimentDescription, mif:experimentList/mif:experimentDescription
Model	mif:names{0,1} , mif:bibref , mif:xref{0,1} , mif:hostOrganismList{0,1} , mif:interactionDetectionMethod , mif:participantIdentificationMethod{0,1} , mif:featureDetectionMethod{0,1} , mif:confidenceList{0,1} , mif:variableParameterList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:bibref, mif:confidenceList, mif:featureDetectionMethod, mif:hostOrganismList, mif:interactionDetectionMethod, mif:names, mif:participantIdentificationMethod, mif:variableParameterList, mif:xref

Attributes

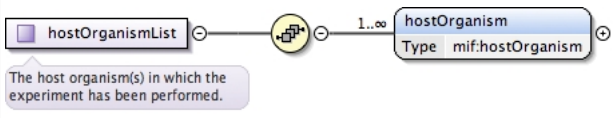
QName	Type	Fixed	Default	Use
id	xs:int			required
	`All major objects have a numerical id which must be unique to that object within an entry. The object may be repeated, though, e.g. in the denormalised representation.`			

Source

```
<xs:complexType name="experimentDescription">
```

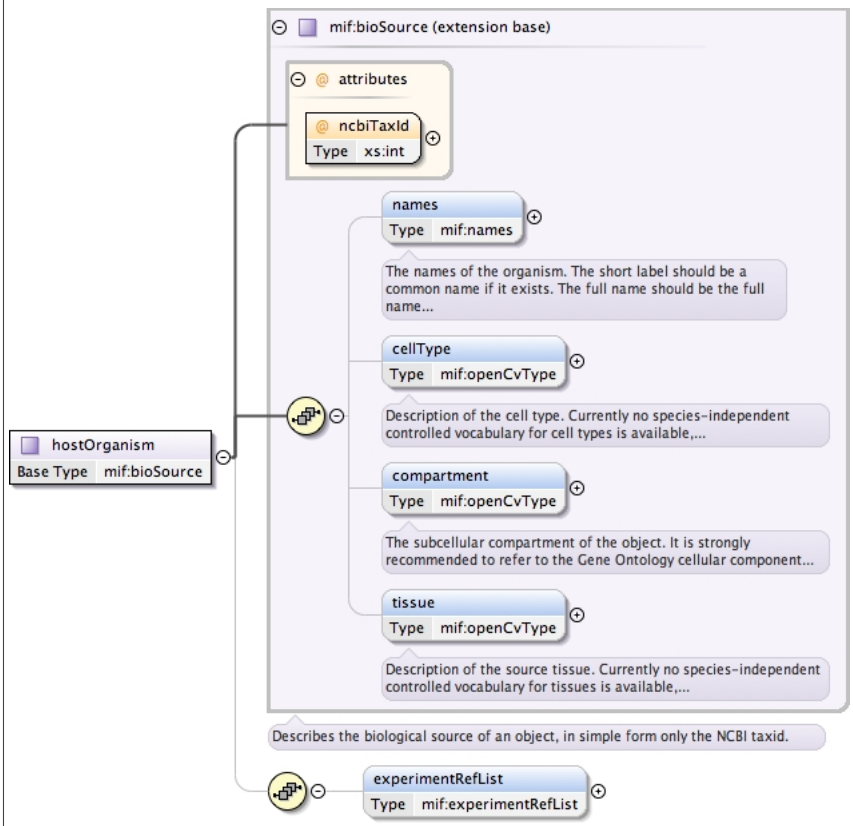
```
  <xs:annotation>
    <xs:documentation>Describes one set of experimental parameters.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0"/>
    <xs:element name="bibref" type="mif:bibref">
      <xs:annotation>
        <xs:documentation>Publication describing the experiment.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Refers to external database description of the experiment.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="hostOrganismList" type="mif:hostOrganismList" minOccurs="0"/>
    <xs:element name="interactionDetectionMethod" type="mif:cvType">
      <xs:annotation>
        <xs:documentation>Experimental method to determine the interaction. This element is
 controlled by the PSI-MI controlled vocabulary "interaction detection method", root term id
 MI:0001.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="participantIdentificationMethod" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Experimental method to determine the interactors involved in the
 interaction. This element is controlled by the PSI-MI controlled vocabulary "participant
 identification method", root term id MI:0002.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureDetectionMethod" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Experimental method to determine the features of interactors. If this
 element is filled it is assumed to apply to all features described in the experiment. But can
 be overridden by the featureDetectionMethod given in the individual feature. This element is
 controlled by the PSI-MI controlled vocabulary "feature detection method", root term id MI:0003.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Confidence in this experiment. Usually a statistical measure.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="variableParameterList" type="mif:variableParameterList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A list of variable parameters used in this experiment - eg - variable
 concentration of a specific drug.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the experiment.</
xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>All major objects have a numerical id which must be unique to that object
 within an entry. The object may be repeated, though, e.g. in the denormalised representation.</
xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Complex Type `mif:hostOrganismList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The host organism(s) in which the experiment has been performed.
Diagram	
Used by	Elements mif:experimentDescription/mif:hostOrganismList, mif:participant/mif:hostOrganismList
Model	mif:hostOrganism+

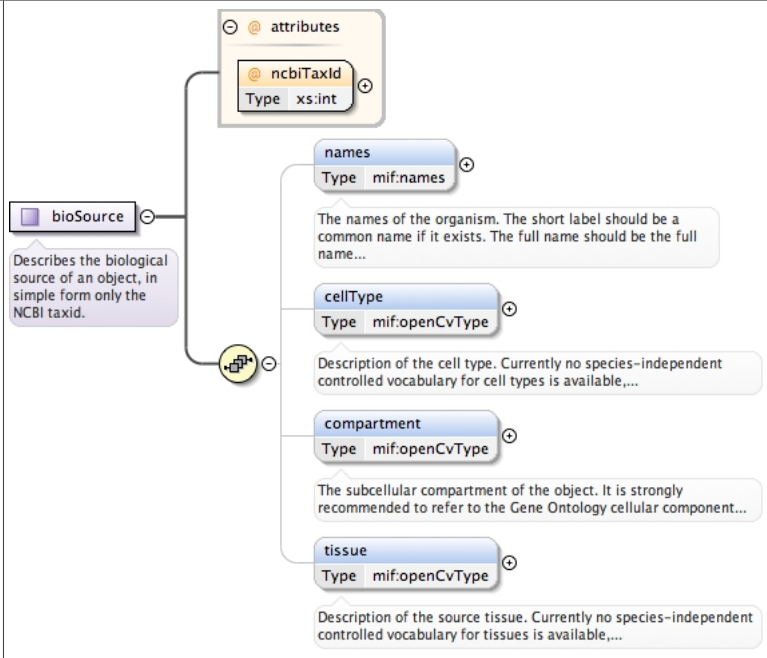
Children	mif:hostOrganism
Source	<xs:complexType name="hostOrganismList"> <xs:annotation> <xs:documentation>The host organism(s) in which the experiment has been performed.</ xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="hostOrganism" type="mif:hostOrganism" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:hostOrganism`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	extension of mif:bioSource
Type hierarchy	• mif:bioSource • mif:hostOrganism
Used by	Element mif:hostOrganismList/mif:hostOrganism
Model	mif:names{0,1} , mif:cellType{0,1} , mif:compartment{0,1} , mif:tissue{0,1} , mif:experimentRefList{0,1}
Children	mif:cellType, mif:compartment, mif:experimentRefList, mif:names, mif:tissue
Attributes	**QName** | **Type** | **Fixed** | **Default** | **Use** **ncbiTaxId** | xs:int | | | required
Source	<xs:complexType name="hostOrganism"> <xs:complexContent> <xs:extension base="mif:bioSource"> <xs:sequence minOccurs="0"> <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"/> </xs:sequence> </xs:extension> </xs:complexContent> </xs:complexType>

Complex Type `mif:bioSource`

Namespace	http://psi.hupo.org/mi/mif300

Annotations	Describes the biological source of an object, in simple form only the NCBI taxid.
Diagram	
Used by	Complex Type: mif:hostOrganism Elements: mif:abstractInteraction/mif:organism, mif:interactor/mif:organism
Model	mif:names{0,1} , mif:cellType{0,1} , mif:compartment{0,1} , mif:tissue{0,1}
Children	mif:cellType, mif:compartment, mif:names, mif:tissue

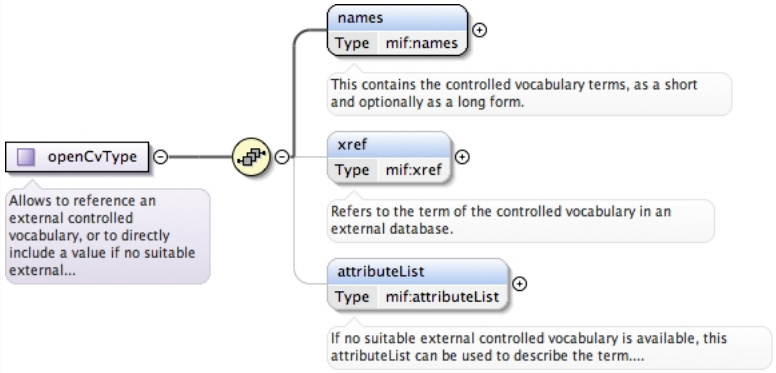
Attributes

QName	Type	Fixed	Default	Use
ncbiTaxId	xs:int			required

Source

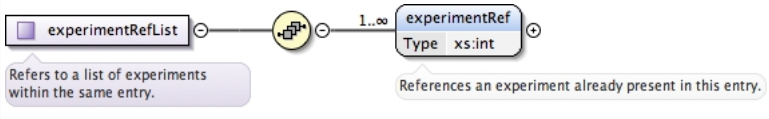
```
<xs:complexType name="bioSource">
  <xs:annotation>
    <xs:documentation>Describes the biological source of an object, in simple form only the NCBI
 taxid.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The names of the organism. The short label should be a common name
 if it exists. The full name should be the full name of the species (i.e. genus species).</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="cellType" type="mif:openCvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description of the cell type. Currently no species-independent controlled
 vocabulary for cell types is available, therefore the choice of reference database(s) is open to
 the data provider.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="compartment" type="mif:openCvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The subcellular compartment of the object. It is strongly recommended to
 refer to the Gene Ontology cellular component in this element.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="tissue" type="mif:openCvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description of the source tissue. Currently no species-independent
 controlled vocabulary for tissues is available, therefore the choice of reference database(s) is
 open to the data provider.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="ncbiTaxId" type="xs:int" use="required"/>
</xs:complexType>
```

Complex Type `mif:openCvType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Allows to reference an external controlled vocabulary, or to directly include a value if no suitable external definition is available.
Diagram	
Used by	Elements: mif:abstractConfidence/mif:type, mif:bioSource/mif:cellType, mif:bioSource/mif:compartment, mif:bioSource/mif:tissue, mif:causalRelationship/mif:causalityStatement, mif:confidenceBase/mif:unit, mif:variableParameter/mif:unit
Model	mif:names , mif:xref{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:names, mif:xref

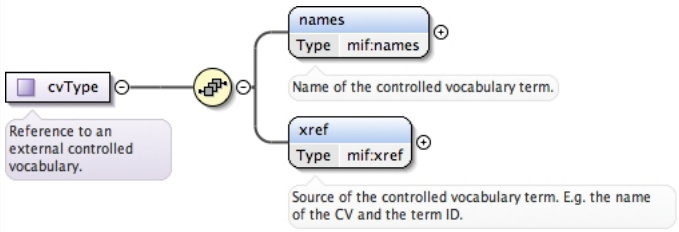
Source	`<xs:complexType name="openCvType">`
	`<xs:annotation>`
	`<xs:documentation>Allows to reference an external controlled vocabulary, or to directly include a value if no suitable external definition is available.</xs:documentation>`
	`</xs:annotation>`
	`<xs:sequence>`
	`<xs:element name="names" type="mif:names">`
	`<xs:annotation>`
	`<xs:documentation>This contains the controlled vocabulary terms, as a short and optionally as a long form.</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`
	`<xs:element name="xref" type="mif:xref" minOccurs="0">`
	`<xs:annotation>`
	`<xs:documentation>Refers to the term of the controlled vocabulary in an external database.</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`
	`<xs:element name="attributeList" type="mif:attributeList" minOccurs="0">`
	`<xs:annotation>`
	`<xs:documentation>If no suitable external controlled vocabulary is available, this attributeList can be used to describe the term. Example: Attribute name: Mouse atlas tissue name; attribute value: spinal cord, day 30.</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`
	`</xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:experimentRefList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Refers to a list of experiments within the same entry.
Diagram	
Used by	Elements: mif:confidence/mif:experimentRefList, mif:experimentalInteractor/mif:experimentRefList, mif:experimentalPreparation/mif:experimentRefList, mif:experimentalRole/mif:experimentRefList, mif:feature/mif:experimentRefList, mif:hostOrganism/mif:experimentRefList, mif:inferredInteraction/mif:experimentRefList, mif:participantIdentificationMethod/mif:experimentRefList
Model	mif:experimentRef+
Children	mif:experimentRef
Source	`<xs:complexType name="experimentRefList">`

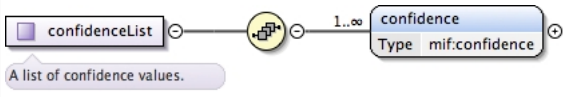
```
  <xs:annotation>
    <xs:documentation>Refers to a list of experiments within the same entry.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="experimentRef" type="xs:int" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>References an experiment already present in this entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:cvType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Reference to an external controlled vocabulary.
Diagram	
Used by	Elements: mif:abstractFeature/mif:featureRole, mif:abstractFeature/mif:featureType, mif:abstractInteraction/mif:evidenceType, mif:abstractInteraction/mif:interactionType, mif:abstractInteraction/mif:interactorType, mif:abstractInteractorCandidateList/mif:moleculeSetType, mif:abstractParticipant/mif:biologicalRole, mif:allostery/mif:allostericMechanism, mif:allostery/mif:allosteryType, mif:baseLocation/mif:endStatus, mif:baseLocation/mif:startStatus, mif:cooperativeEffectType/mif:cooperativeEffectOutcome, mif:cooperativeEffectType/mif:cooperativeEffectResponse, mif:evidenceType/mif:evidenceMethodList/mif:evidenceMethod, mif:experimentDescription/mif:featureDetectionMethod, mif:experimentDescription/mif:interactionDetectionMethod, mif:experimentDescription/mif:participantIdentificationMethod, mif:feature/mif:featureDetectionMethod, mif:feature/mif:featureRole, mif:feature/mif:featureType, mif:interaction/mif:interactionType, mif:interactor/mif:interactorType, mif:interactorCandidateList/mif:moleculeSetType, mif:participant/mif:biologicalRole Complex Types: mif:experimentalPreparation, mif:experimentalRole, mif:participantIdentificationMethod
Model	mif:names , mif:xref
Children	mif:names, mif:xref

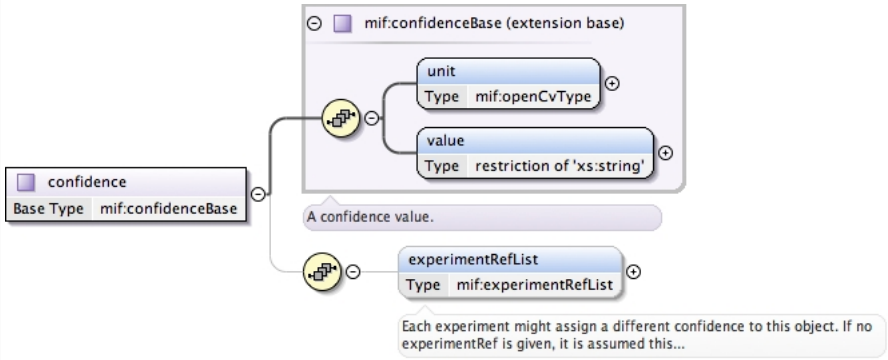
Source	`<xs:complexType name="cvType">`
	`  <xs:annotation>`
	`  <xs:documentation>Reference to an external controlled vocabulary.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="names" type="mif:names">`
	`  <xs:annotation>`
	`  <xs:documentation>Name of the controlled vocabulary term.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  <xs:element name="xref" type="mif:xref">`
	`  <xs:annotation>`
	`  <xs:documentation>Source of the controlled vocabulary term. E.g. the name of the CV and the term ID.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:confidenceList`

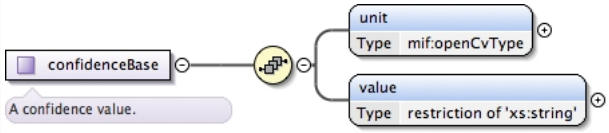
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of confidence values.
Diagram	
Used by	Elements: mif:experimentDescription/mif:confidenceList, mif:interaction/mif:confidenceList, mif:participant/mif:confidenceList

Model	mif:confidence+
Children	mif:confidence
Source	<xs:complexType name="confidenceList"> <xs:annotation> <xs:documentation>A list of confidence values.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="confidence" type="mif:confidence" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:confidence`

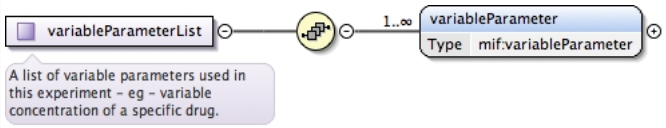
Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	extension of mif:confidenceBase
Type hierarchy	• mif:confidenceBase • mif:confidence
Used by	Element mif:confidenceList/mif:confidence
Model	mif:unit , mif:value , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:unit, mif:value
Source	<xs:complexType name="confidence"> <xs:complexContent> <xs:extension base="mif:confidenceBase"> <xs:sequence minOccurs="0"> <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"> <xs:annotation> <xs:documentation>Each experiment might assign a different confidence to this object. If no experimentRef is given, it is assumed this confidence refers to all experiments linked to the object.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:extension> </xs:complexContent> </xs:complexType>

Complex Type `mif:confidenceBase`

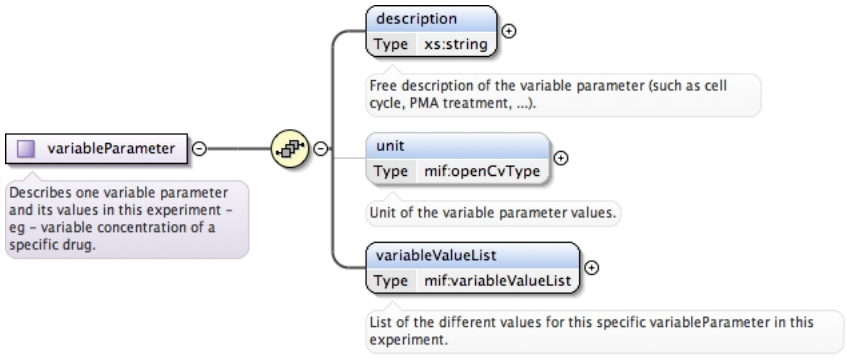
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A confidence value.
Diagram	
Used by	Complex Type mif:confidence
Model	mif:unit , mif:value
Children	mif:unit, mif:value
Source	<xs:complexType name="confidenceBase"> <xs:annotation>

```
    <xs:documentation>A confidence value.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="unit" type="mif:openCvType"/>
    <xs:element name="value">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:variableParameterList`

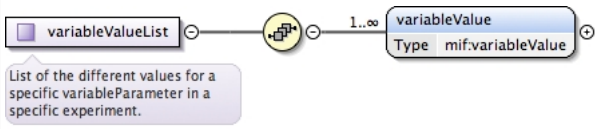
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of variable parameters used in this experiment - eg - variable concentration of a specific drug.
Diagram	
Used by	Element mif:experimentDescription/mif:variableParameterList
Model	mif:variableParameter+
Children	mif:variableParameter
Source	<xs:complexType name="variableParameterList"> <xs:annotation> <xs:documentation>A list of variable parameters used in this experiment - eg - variable concentration of a specific drug.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="variableParameter" type="mif:variableParameter" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:variableParameter`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes one variable parameter and its values in this experiment - eg - variable concentration of a specific drug.
Diagram	
Used by	Element mif:variableParameterList/mif:variableParameter
Model	mif:description , mif:unit{0,1} , mif:variableValueList
Children	mif:description, mif:unit, mif:variableValueList
Source	<xs:complexType name="variableParameter"> <xs:annotation> <xs:documentation>Describes one variable parameter and its values in this experiment - eg - variable concentration of a specific drug.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="description" type="xs:string"> <xs:annotation> <xs:documentation>Free description of the variable parameter (such as cell cycle, PMA treatment, ...).</xs:documentation>

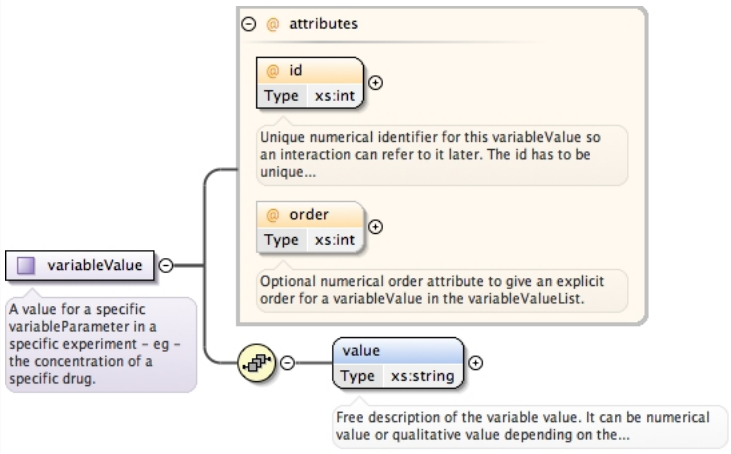
```
      </xs:annotation>
    </xs:element>
    <xs:element name="unit" type="mif:openCvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Unit of the variable parameter values.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="variableValueList" type="mif:variableValueList">
      <xs:annotation>
        <xs:documentation>List of the different values for this specific variableParameter in this
 experiment.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:variableValueList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`List of the different values for a specific variableParameter in a specific experiment.`
Diagram	
Used by	Element mif:variableParameter/mif:variableValueList
Model	mif:variableValue+
Children	mif:variableValue

Source	`<xs:complexType name="variableValueList">`
	`  <xs:annotation>`
	`  <xs:documentation>List of the different values for a specific variableParameter in a specific experiment.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="variableValue" type="mif:variableValue" maxOccurs="unbounded"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:variableValue`

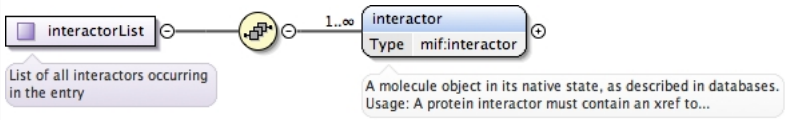
Namespace	http://psi.hupo.org/mi/mif300
Annotations	`A value for a specific variableParameter in a specific experiment - eg - the concentration of a specific drug.`
Diagram	
Used by	Element mif:variableValueList/mif:variableValue
Model	mif:value
Children	mif:value
Attributes	**QName** / **Type** / **Fixed** / **Default** / **Use** **id** / xs:int / / / required

	QName	Type	Fixed	Default	Use
		Unique numerical identifier for this variableValue so an interaction can refer to it later. The id has to be unique within a same entry.			
	order	xs:int			optional
		Optional numerical order attribute to give an explicit order for a variableValue in the variableValueList.			

Source

```
<xs:complexType name="variableValue">
  <xs:annotation>
    <xs:documentation>A value for a specific variableParameter in a specific experiment - eg - the
 concentration of a specific drug.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="value" type="xs:string">
      <xs:annotation>
        <xs:documentation>Free description of the variable value. It can be numerical value or
 qualitative value depending on the variableParameter.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>Unique numerical identifier for this variableValue so an interaction can
 refer to it later. The id has to be unique within a same entry.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="order" type="xs:int" use="optional">
    <xs:annotation>
      <xs:documentation>Optional numerical order attribute to give an explicit order for a
 variableValue in the variableValueList.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Complex Type `mif:interactorList`

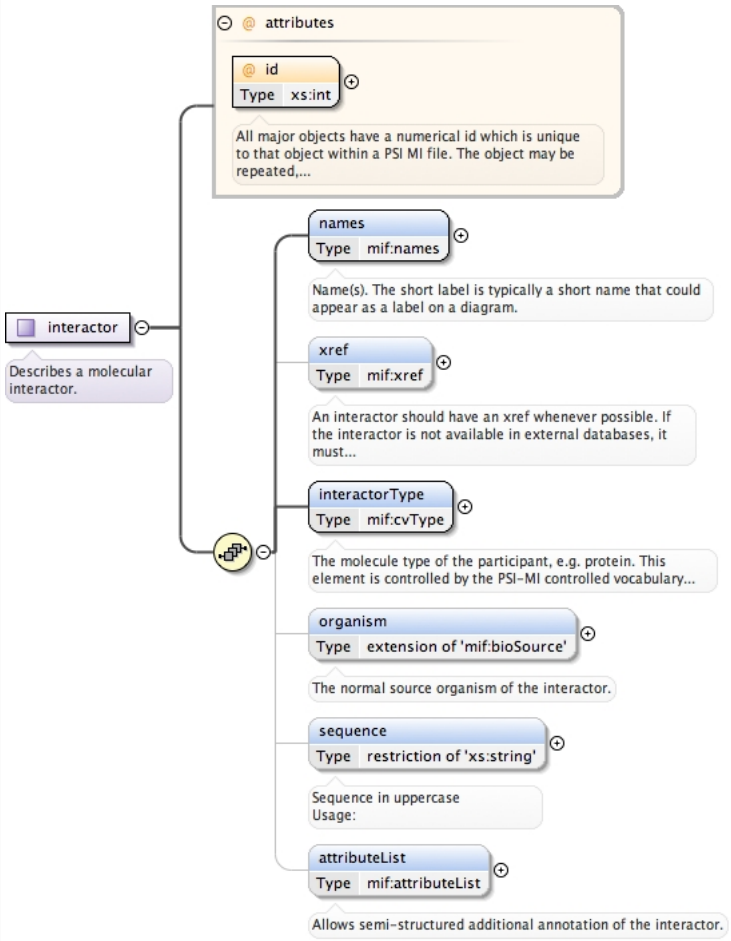
Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of all interactors occurring in the entry
Diagram	
Used by	Element mif:entry/mif:interactorList	
Model	mif:interactor+
Children	mif:interactor
Source	

```
<xs:complexType name="interactorList">
  <xs:annotation>
    <xs:documentation>List of all interactors occurring in the entry</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="interactor" type="mif:interactor" minOccurs="1" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>A molecule object in its native state, as described in databases.</
xs:documentation>
        <xs:documentation>Usage: A protein interactor must contain an xref to UniProt and NCBI-GI
 where possible.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:interactor`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes a molecular interactor.

Diagram



Used by

Elements: mif:abstractParticipant/mif:interactor, mif:experimentalInteractor/mif:interactor, mif:interactorList/mif:interactor, mif:participant/mif:interactor, mif:participantCandidateParent/mif:interactor

Model: mif:names , mif:xref{0,1} , mif:interactorType , mif:organism{0,1} , mif:sequence{0,1} , mif:attributeList{0,1}

Children: mif:attributeList, mif:interactorType, mif:names, mif:organism, mif:sequence, mif:xref

Attributes

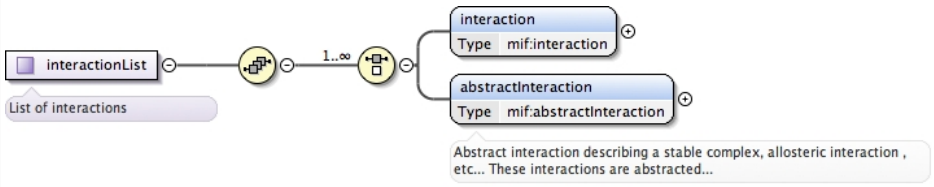
QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:complexType name="interactor">
  <xs:annotation>
    <xs:documentation>Describes a molecular interactor.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names">
      <xs:annotation>
        <xs:documentation>Name(s). The short label is typically a short name that could appear as a
 label on a diagram.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>An interactor should have an xref whenever possible. If the interactor
 is not available in external databases, it must be characterised within this object e.g. by its
 sequence.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="interactorType" type="mif:cvType">
      <xs:annotation>
        <xs:documentation>The molecule type of the participant, e.g. protein. This element
 is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:0313.</
xs:documentation>
      </xs:annotation>
    </xs:element>
```

```
    <xs:element name="organism" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The normal source organism of the interactor.</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:complexContent>
          <xs:extension base="mif:bioSource"/>
        </xs:complexContent>
      </xs:complexType>
    </xs:element>
    <xs:element name="sequence" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Sequence in uppercase</xs:documentation>
        <xs:documentation>Usage:</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Allows semi-structured additional annotation of the interactor.</
xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>All major objects have a numerical id which is unique to that object within
 a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</
xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

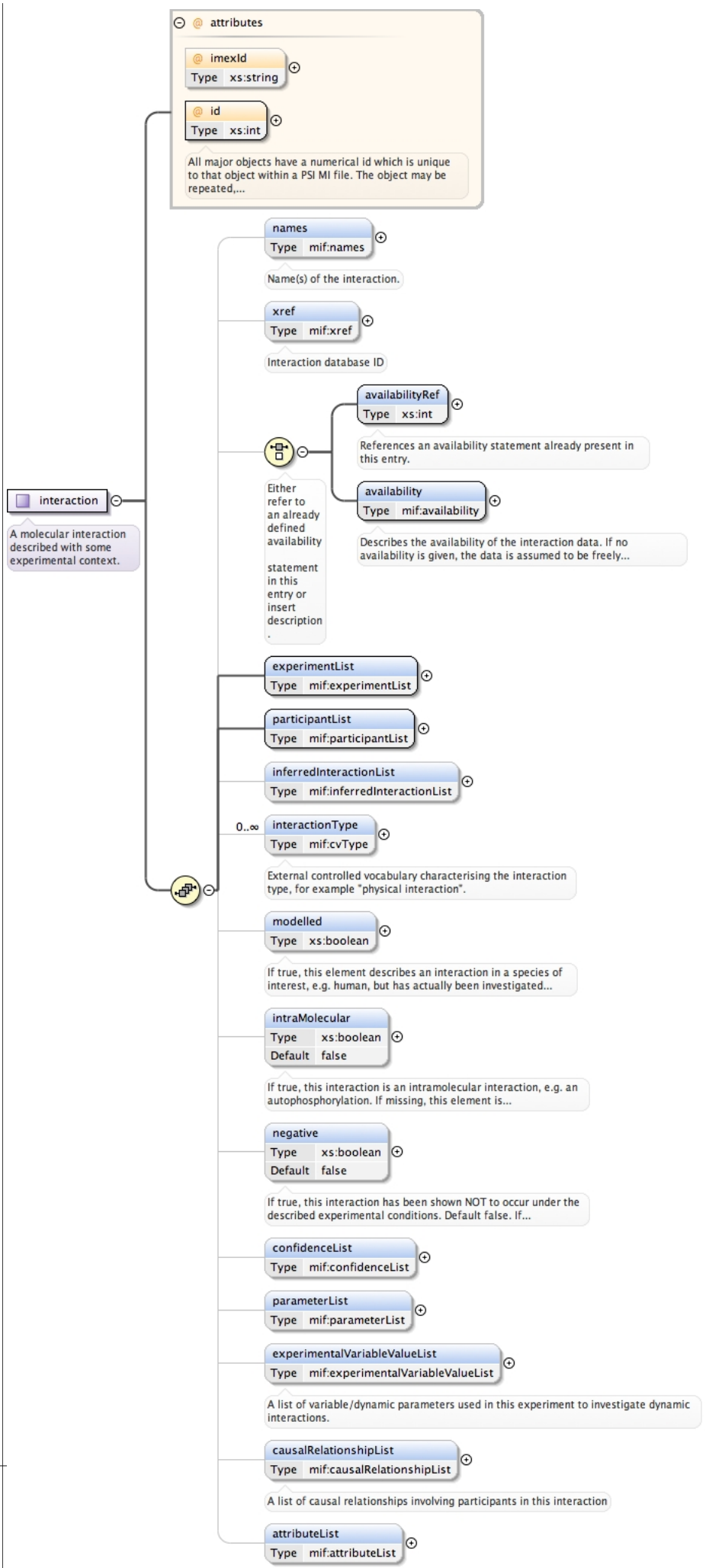
Complex Type `mif:interactionList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of interactions
Diagram	
Used by	Element mif:entry/mif:interactionList
Model	(mif:interaction | mif:abstractInteraction)
Children	mif:abstractInteraction, mif:interaction
Source	<xs:complexType name="interactionList"> <xs:annotation> <xs:documentation>List of interactions</xs:documentation> </xs:annotation> <xs:sequence> <xs:choice maxOccurs="unbounded"> <xs:element name="interaction" type="mif:interaction"/> <xs:element name="abstractInteraction" type="mif:abstractInteraction"> <xs:annotation> <xs:documentation>Abstract interaction describing a stable complex, allosteric interaction , etc... These interactions are abstracted from the experimental context and used to describe biological entities</xs:documentation> </xs:annotation> </xs:element> </xs:choice> </xs:sequence> </xs:complexType>

Complex Type `mif:interaction`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecular interaction described with some experimental context.

Diagram


attributes
imexId
Type xs:string
id
Type xs:int
All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated,...
interaction
A molecular interaction described with some experimental context.
names
Type mif:names
Name(s) of the interaction.
xref
Type mif:xref
Interaction database ID
availabilityRef
Type xs:int
References an availability statement already present in this entry.
availability
Type mif:availability
Describes the availability of the interaction data. If no availability is given, the data is assumed to be freely...
Either refer to an already defined availability statement in this entry or insert description.
experimentList
Type mif:experimentList
participantList
Type mif:participantList
inferredInteractionList
Type mif:inferredInteractionList
0..∞
interactionType
Type mif:cvType
External controlled vocabulary characterising the interaction type, for example "physical interaction".
modelled
Type xs:boolean
If true, this element describes an interaction in a species of interest, e.g. human, but has actually been investigated...
intraMolecular
Type xs:boolean
Default false
If true, this interaction is an intramolecular interaction, e.g. an autophosphorylation. If missing, this element is...
negative
Type xs:boolean
Default false
If true, this interaction has been shown NOT to occur under the described experimental conditions. Default false. If...
confidenceList
Type mif:confidenceList
parameterList
Type mif:parameterList
experimentalVariableValueList
Type mif:experimentalVariableValueList
A list of variable/dynamic parameters used in this experiment to investigate dynamic interactions.
causalRelationshipList
Type mif:causalRelationshipList
A list of causal relationships involving participants in this interaction
attributeList
Type mif:attributeList

Used by	Element mif:interactionList/mif:interaction
Model	mif:names{0,1} , mif:xref{0,1} , (mif:availabilityRef | mif:availability) , mif:experimentList , mif:participantList , mif:inferredInteractionList{0,1} , mif:interactionType* , mif:modelled{0,1} , mif:intraMolecular{0,1} , mif:negative{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , mif:experimentalVariableValueList{0,1} , mif:causalRelationshipList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:availability, mif:availabilityRef, mif:causalRelationshipList, mif:confidenceList, mif:experimentList, mif:experimentalVariableValueList, mif:inferredInteractionList, mif:interactionType, mif:intraMolecular, mif:modelled, mif:names, mif:negative, mif:parameterList, mif:participantList, mif:xref

Attributes

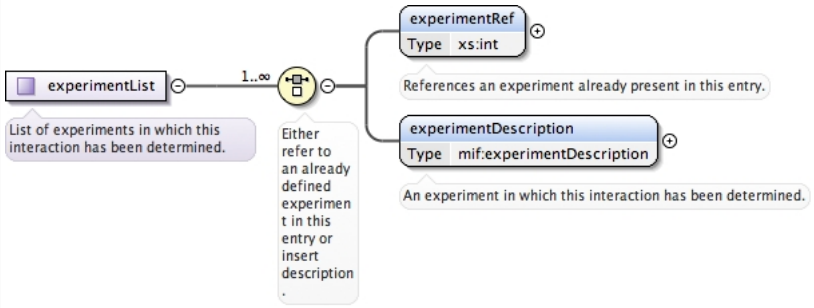
QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			
imexId	xs:string			optional

Source

```
<xs:complexType name="interaction">
  <xs:annotation>
    <xs:documentation>A molecular interaction described with some experimental context.</
xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Name(s) of the interaction.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Interaction database ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:choice minOccurs="0">
      <xs:annotation>
        <xs:documentation>Either refer to an already defined availability statement in this entry or
 insert description.</xs:documentation>
      </xs:annotation>
      <xs:element name="availabilityRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an availability statement already present in this entry.</
xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="availability" type="mif:availability">
        <xs:annotation>
          <xs:documentation>Describes the availability of the interaction data. If no availability
 is given, the data is assumed to be freely available.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
    <xs:element name="experimentList" type="mif:experimentList"/>
    <xs:element name="participantList" type="mif:participantList"/>
    <xs:element name="inferredInteractionList" type="mif:inferredInteractionList" minOccurs="0"/>
    <xs:element name="interactionType" type="mif:cvType" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>External controlled vocabulary characterising the interaction type, for
 example "physical interaction".</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="modelled" type="xs:boolean" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If true, this element describes an interaction in a species of interest,
 e.g. human, but has actually been investigated in another organism, e.g. mouse. The transfer will
 usually be based on a homology statement made by the data producer. If this optional element is
 missing, it is assumed to be set to false.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="intraMolecular" type="xs:boolean" default="false" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If true, this interaction is an intramolecular interaction, e.g. an
 autophosphorylation. If missing, this element is assumed to be false.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="negative" type="xs:boolean" default="false" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If true, this interaction has been shown NOT to occur under the described
 experimental conditions. Default false. If this optional element is missing, it is assumed to be
 set to false.</xs:documentation>
```

```
      </xs:annotation>
    </xs:element>
    <xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0"/>
    <xs:element name="parameterList" type="mif:parameterList" minOccurs="0"/>
    <xs:element name="experimentalVariableValueList" type="mif:experimentalVariableValueList"
 minOccurs="0">
      <xs:annotation>
        <xs:documentation>A list of variable/dynamic parameters used in this experiment to
 investigate dynamic interactions.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="causalRelationshipList" type="mif:causalRelationshipList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A list of causal relationships involving participants in this
 interaction</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute name="imexId" type="xs:string" use="optional"/>
  <xs:attribute name="id" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>All major objects have a numerical id which is unique to that object within
 a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</
xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

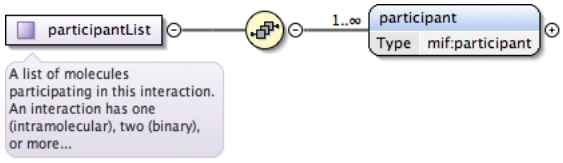
Complex Type `mif:experimentList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of experiments in which this interaction has been determined.
Diagram	
Used by	Element mif:interaction/mif:experimentList
Model	mif:experimentRef | mif:experimentDescription
Children	mif:experimentDescription, mif:experimentRef
Source	

```
<xs:complexType name="experimentList">
  <xs:annotation>
    <xs:documentation>List of experiments in which this interaction has been determined.</
xs:documentation>
  </xs:annotation>
  <xs:choice maxOccurs="unbounded">
    <xs:annotation>
      <xs:documentation>Either refer to an already defined experiment in this entry or insert
 description.</xs:documentation>
    </xs:annotation>
    <xs:element name="experimentRef" type="xs:int">
      <xs:annotation>
        <xs:documentation>References an experiment already present in this entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="experimentDescription" type="mif:experimentDescription">
      <xs:annotation>
        <xs:documentation>An experiment in which this interaction has been determined.</
xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:choice>
</xs:complexType>
```

Complex Type `mif:participantList`

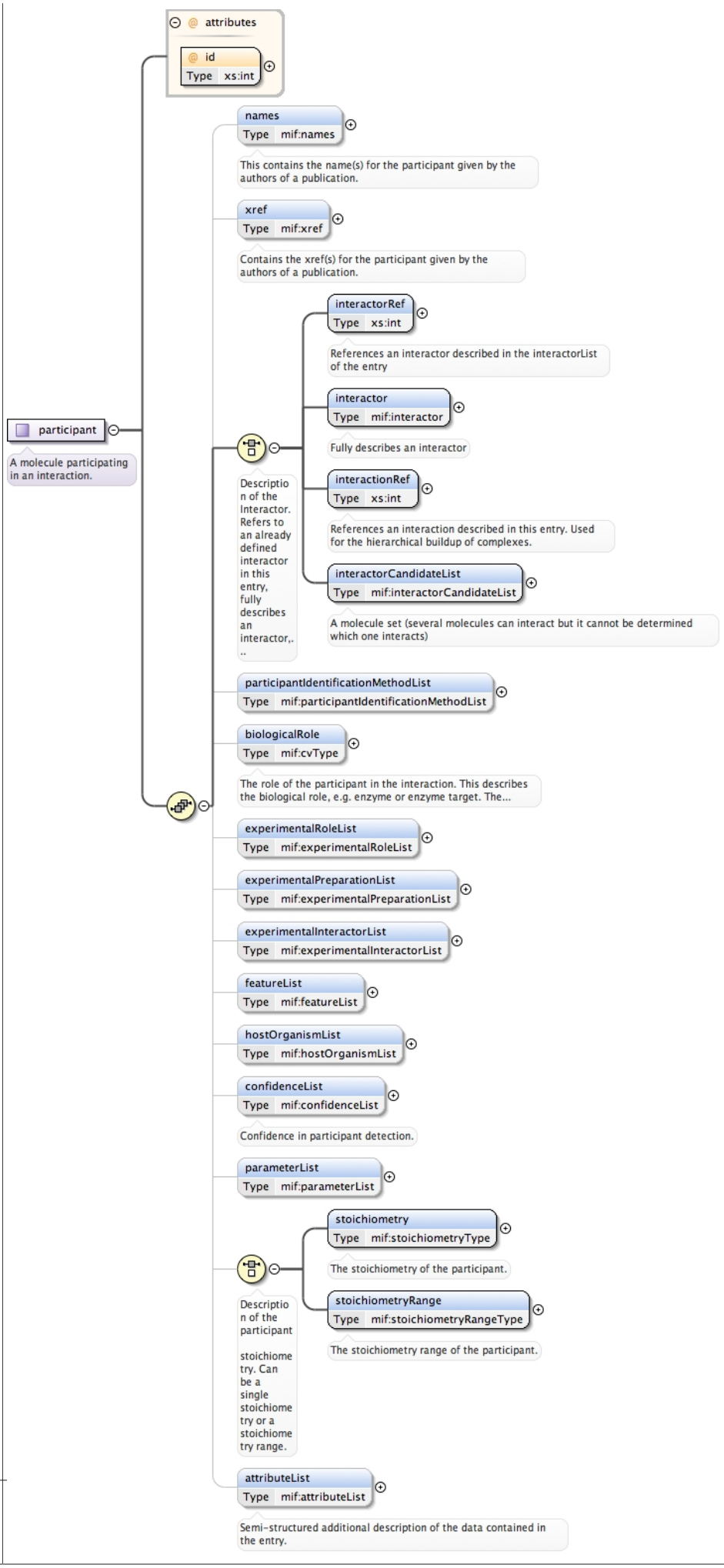
Namespace	http://psi.hupo.org/mi/mif300

Annotations	A list of molecules participating in this interaction. An interaction has one (intramolecular), two (binary), or more (n-ary, complexes) participants.
Diagram	
Used by	Element mif:interaction/mif:participantList
Model	mif:participant+
Children	mif:participant
Source	<xs:complexType name="participantList"> <xs:annotation> <xs:documentation>A list of molecules participating in this interaction. An interaction has one (intramolecular), two (binary), or more (n-ary, complexes) participants.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="participant" type="mif:participant" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:participant`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecule participating in an interaction.

Diagram


attributes
id
Type xs:int
participant
A molecule participating in an interaction.
names
Type mif:names
This contains the name(s) for the participant given by the authors of a publication.
xref
Type mif:xref
Contains the xref(s) for the participant given by the authors of a publication.
interactorRef
Type xs:int
References an interactor described in the interactorList of the entry
interactor
Type mif:interactor
Fully describes an interactor
interactionRef
Type xs:int
References an interaction described in this entry. Used for the hierarchical buildup of complexes.
interactorCandidateList
Type mif:interactorCandidateList
A molecule set (several molecules can interact but it cannot be determined which one interacts)
Description of the Interactor. Refers to an already defined interactor in this entry, fully describes an interactor,...
participantIdentificationMethodList
Type mif:participantIdentificationMethodList
biologicalRole
Type mif:cvType
The role of the participant in the interaction. This describes the biological role, e.g. enzyme or enzyme target. The...
experimentalRoleList
Type mif:experimentalRoleList
experimentalPreparationList
Type mif:experimentalPreparationList
experimentalInteractorList
Type mif:experimentalInteractorList
featureList
Type mif:featureList
hostOrganismList
Type mif:hostOrganismList
confidenceList
Type mif:confidenceList
Confidence in participant detection.
parameterList
Type mif:parameterList
stoichiometry
Type mif:stoichiometryType
The stoichiometry of the participant.
stoichiometryRange
Type mif:stoichiometryRangeType
The stoichiometry range of the participant.
Description of the participant stoichiometry. Can be a single stoichiometry or a stoichiometry range.
attributeList
Type mif:attributeList
Semi-structured additional description of the data contained in the entry.

Used by	Element mif:participantList/mif:participant
Model	mif:names{0,1} , mif:xref{0,1} , (mif:interactorRef | mif:interactor | mif:interactionRef | mif:interactorCandidateList) , mif:participantIdentificationMethodList{0,1} , mif:biologicalRole{0,1} , mif:experimentalRoleList{0,1} , mif:experimentalPreparationList{0,1} , mif:experimentalInteractorList{0,1} , mif:featureList{0,1} , mif:hostOrganismList{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , (mif:stoichiometry | mif:stoichiometryRange) , mif:attributeList{0,1}
Children	mif:attributeList, mif:biologicalRole, mif:confidenceList, mif:experimentalInteractorList, mif:experimentalPreparationList, mif:experimentalRoleList, mif:featureList, mif:hostOrganismList, mif:interactionRef, mif:interactor, mif:interactorCandidateList, mif:interactorRef, mif:names, mif:parameterList, mif:participantIdentificationMethodList, mif:stoichiometry, mif:stoichiometryRange, mif:xref

Attributes

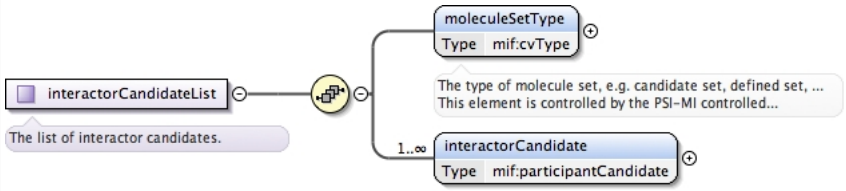
QName	Type	Fixed	Default	Use
id	xs:int			required

Source

```
<xs:complexType name="participant">
  <xs:annotation>
    <xs:documentation>A molecule participating in an interaction.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>This contains the name(s) for the participant given by the authors of a
 publication.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Contains the xref(s) for the participant given by the authors of a
 publication.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:choice>
      <xs:annotation>
        <xs:documentation>Description of the Interactor. Refers to an already defined interactor in
 this entry, fully describes an interactor, references another interaction defined in this entry, to
 allow the hierarchical building up of complexes from subunits, or describe a molecule set (several
 molecules can interact but it cannot be determined which one interacts).</xs:documentation>
      </xs:annotation>
      <xs:element name="interactorRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an interactor described in the interactorList of the entry</
xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactor" type="mif:interactor">
        <xs:annotation>
          <xs:documentation>Fully describes an interactor</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactionRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an interaction described in this entry. Used for the
 hierarchical buildup of complexes.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactorCandidateList" type="mif:interactorCandidateList">
        <xs:annotation>
          <xs:documentation>A molecule set (several molecules can interact but it cannot be
 determined which one interacts)</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
    <xs:element name="participantIdentificationMethodList"
 type="mif:participantIdentificationMethodList" minOccurs="0"/>
    <xs:element name="biologicalRole" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The role of the participant in the interaction. This describes the
 biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g.
 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled
 vocabulary "biologicalRole", root term id MI:0500.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="experimentalRoleList" type="mif:experimentalRoleList" minOccurs="0"/>
    <xs:element name="experimentalPreparationList" type="mif:experimentalPreparationList"
 minOccurs="0"/>
    <xs:element name="experimentalInteractorList" type="mif:experimentalInteractorList"
 minOccurs="0"/>
    <xs:element name="featureList" type="mif:featureList" minOccurs="0"/>
    <xs:element name="hostOrganismList" type="mif:hostOrganismList" minOccurs="0"/>
    <xs:element name="confidenceList" type="mif:confidenceList" minOccurs="0">
```

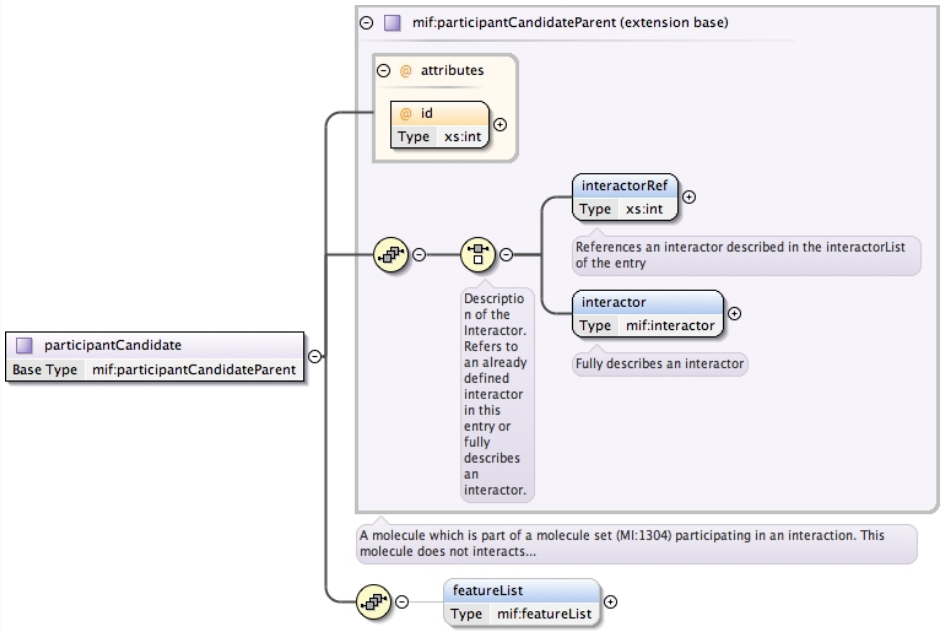
```
      <xs:annotation>
        <xs:documentation>Confidence in participant detection.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="parameterList" type="mif:parameterList" minOccurs="0"/>
    <xs:choice minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description of the participant stoichiometry. Can be a single
 stoichiometry or a stoichiometry range.</xs:documentation>
      </xs:annotation>
      <xs:element name="stoichiometry" type="mif:stoichiometryType">
        <xs:annotation>
          <xs:documentation>The stoichiometry of the participant.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="stoichiometryRange" type="mif:stoichiometryRangeType">
        <xs:annotation>
          <xs:documentation>The stoichiometry range of the participant.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the data contained in the
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required"/>
</xs:complexType>
```

Complex Type `mif:interactorCandidateList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The list of interactor candidates.
Diagram	
Used by	Element mif:participant/mif:interactorCandidateList
Model	mif:moleculeSetType , mif:interactorCandidate+
Children	mif:interactorCandidate, mif:moleculeSetType
Source	<xs:complexType name="interactorCandidateList"> <xs:annotation> <xs:documentation>The list of interactor candidates.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="moleculeSetType" type="mif:cvType" minOccurs="1"> <xs:annotation> <xs:documentation>The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.</xs:documentation> </xs:annotation> </xs:element> <xs:element name="interactorCandidate" type="mif:participantCandidate" maxOccurs="unbounded" minOccurs="1"/> </xs:sequence> </xs:complexType>

Complex Type `mif:participantCandidate`

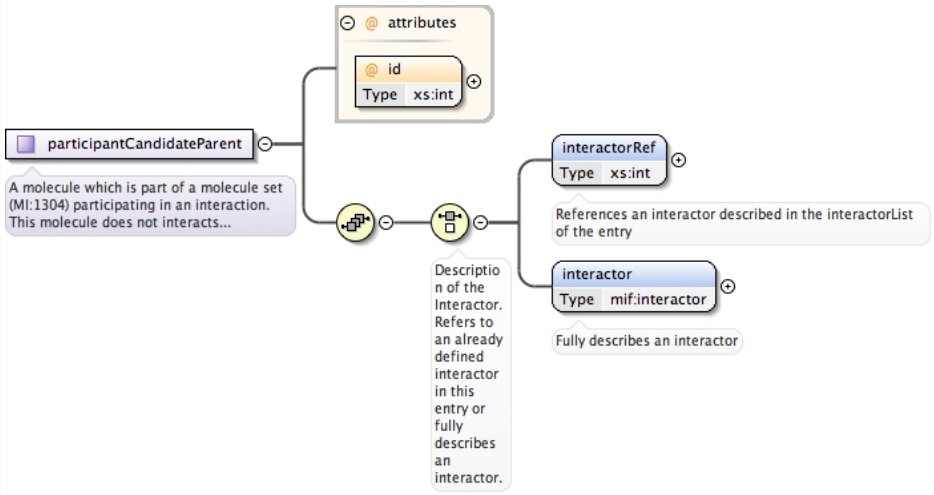
Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Type	extension of mif:participantCandidateParent
Type hierarchy	• mif:participantCandidateParent • mif:participantCandidate
Used by	Element mif:interactorCandidateList/mif:interactorCandidate
Model	(mif:interactorRef | mif:interactor) , mif:featureList{0,1}
Children	mif:featureList, mif:interactor, mif:interactorRef
Attributes	**QName** | **Type** | **Fixed** | **Default** | **Use** **id** | xs:int | | | required

Source	`<xs:complexType name="participantCandidate">`
	`  <xs:complexContent>`
	`  <xs:extension base="mif:participantCandidateParent">`
	`  <xs:sequence>`
	`  <xs:element name="featureList" type="mif:featureList" minOccurs="0"/>`
	`  </xs:sequence>`
	`  </xs:extension>`
	`  </xs:complexContent>`
	`</xs:complexType>`

Complex Type `mif:participantCandidateParent`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecule which is part of a molecule set (MI:1304) participating in an interaction. This molecule does not interacts with the other participant candidates. A molecule set is a group of molecules linked by a high degree of similarity of sequence and/or function and not easily separated by participant identification methods. It means that we cannot determine for sure which molecules of the molecule set is the participant of this interaction.

Diagram	
Used by	Complex Types mif:abstractParticipantCandidate, mif:participantCandidate
Model	(mif:interactorRef | mif:interactor)
Children	mif:interactor, mif:interactorRef

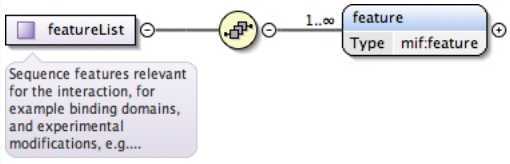
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

Source

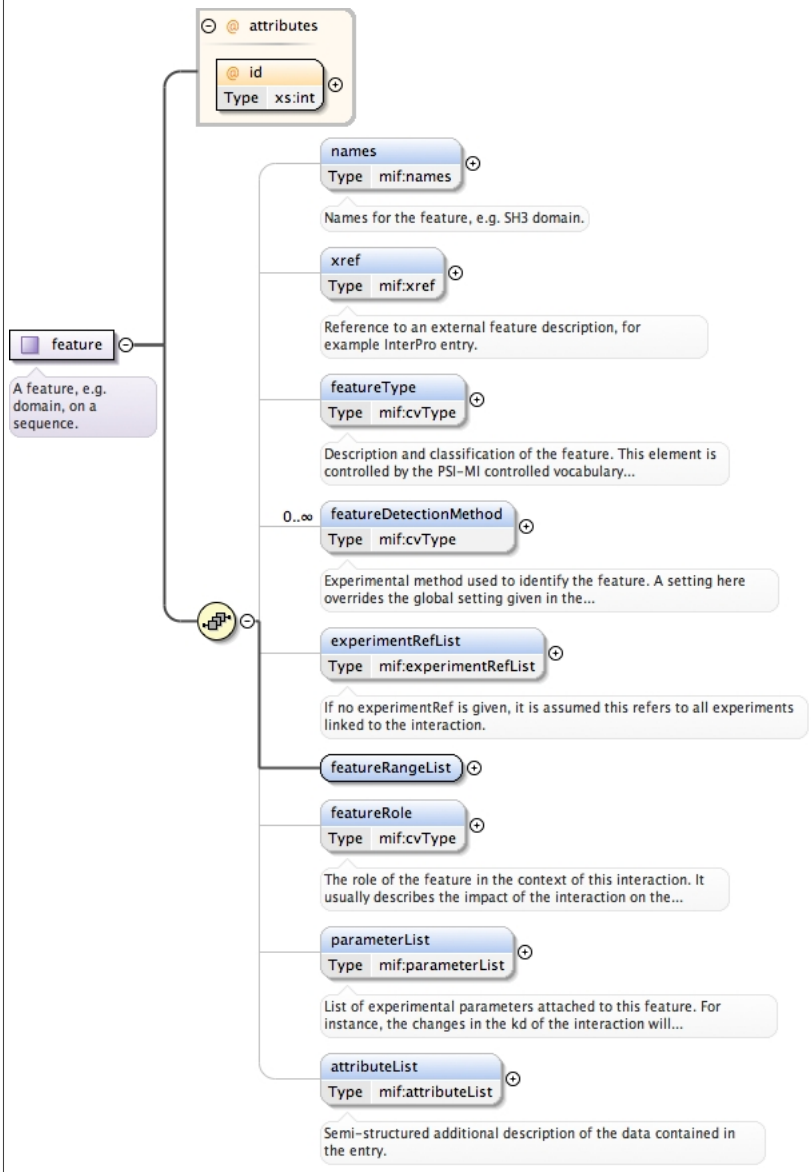
```
<xs:complexType name="participantCandidateParent">
  <xs:annotation>
    <xs:documentation>A molecule which is part of a molecule set (MI:1304) participating in an
 interaction. This molecule does not interacts with the other participant candidates. A molecule set
 is a group of molecules linked by a high degree of similarity of sequence and/or function and not
 easily separated by participant identification methods. It means that we cannot determine for sure
 which molecules of the molecule set is the participant of this interaction.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:choice>
      <xs:annotation>
        <xs:documentation>Description of the Interactor. Refers to an already defined interactor in
 this entry or fully describes an interactor.</xs:documentation>
      </xs:annotation>
      <xs:element name="interactorRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an interactor described in the interactorList of the entry</
xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactor" type="mif:interactor">
        <xs:annotation>
          <xs:documentation>Fully describes an interactor</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required"/>
</xs:complexType>
```

Complex Type `mif:featureList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Sequence features relevant for the interaction, for example binding domains, and experimental modifications, e.g. protein tags.
Diagram	
Used by	Elements mif:participant/mif:featureList, mif:participantCandidate/mif:featureList
Model	mif:feature+
Children	mif:feature

Source	<xs:complexType name="featureList"> <xs:annotation> <xs:documentation>Sequence features relevant for the interaction, for example binding domains, and experimental modifications, e.g. protein tags.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="feature" type="mif:feature" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:feature`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A feature, e.g. domain, on a sequence.
Diagram	
Used by	Element mif:featureList/mif:feature
Model	mif:names{0,1} , mif:xref{0,1} , mif:featureType{0,1} , mif:featureDetectionMethod* , mif:experimentRefList{0,1} , mif:featureRangeList , mif:featureRole{0,1} , mif:parameterList{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:experimentRefList, mif:featureDetectionMethod, mif:featureRangeList, mif:featureRole, mif:featureType, mif:names, mif:parameterList, mif:xref

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

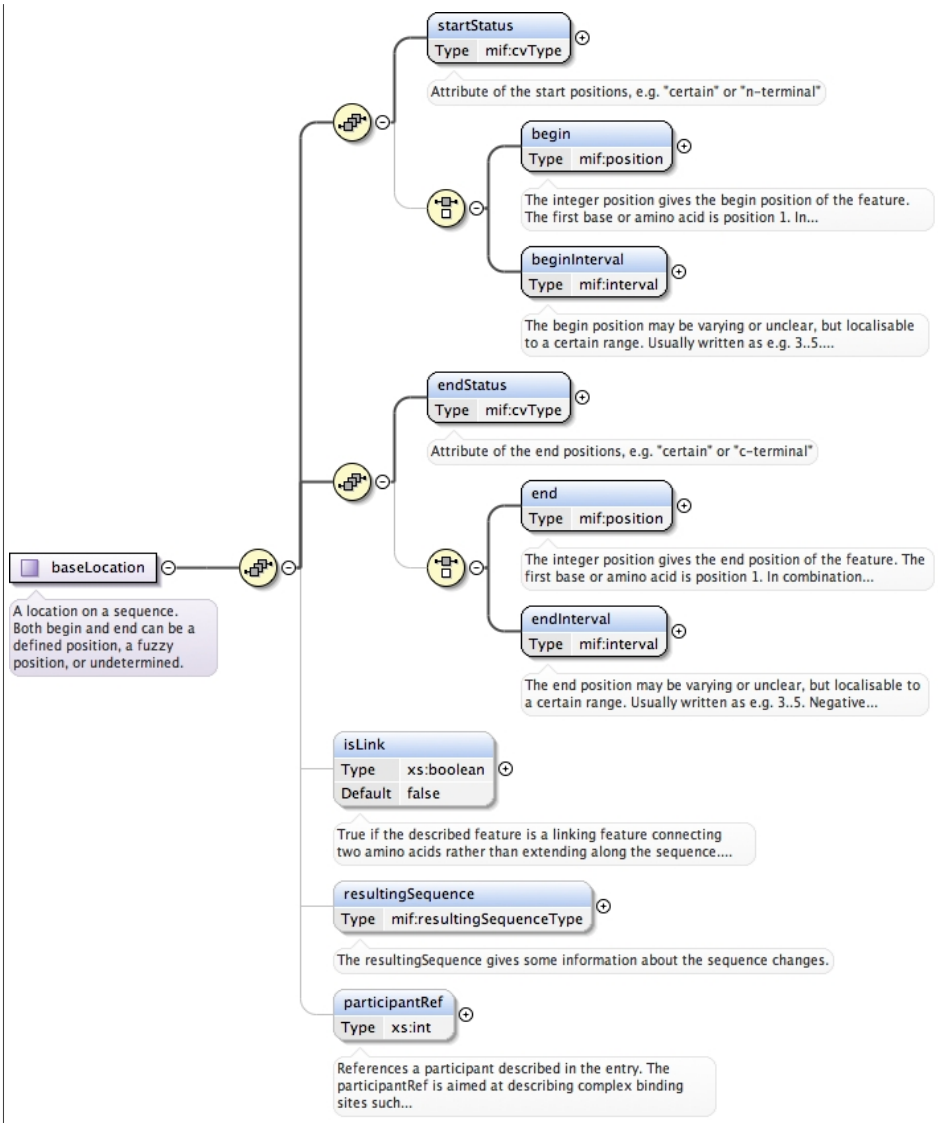
Source

```
<xs:complexType name="feature">
  <xs:annotation>
```

```
    <xs:documentation>A feature, e.g. domain, on a sequence.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Names for the feature, e.g. SH3 domain.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Reference to an external feature description, for example InterPro
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureType" type="mif:cvType" maxOccurs="1" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description and classification of the feature. This element is controlled
 by the PSI-MI controlled vocabulary "feature", root term id MI:0116.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureDetectionMethod" type="mif:cvType" maxOccurs="unbounded" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Experimental method used to identify the feature. A setting here
 overrides the global setting given in the experimentDescription. External controlled vocabulary.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments
 linked to the interaction.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureRangeList">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded">
            <xs:annotation>
              <xs:documentation>Location of the feature on the sequence of the interactor. One
 feature may have more than one featureRange, used e.g. for features which involve sequence
 positions close in the folded, three-dimensional state of a protein, but non-continuous along the
 sequence.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="featureRole" type="mif:cvType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>The role of the feature in the context of this interaction. It usually
 describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of
 the feature on the interaction. (Ex: prerequisite-ptm,...).</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="parameterList" type="mif:parameterList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>List of experimental parameters attached to this feature. For instance,
 the changes in the kd of the interaction will be added at the feature level with the description of
 the mutation</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the data contained in the
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required"/>
</xs:complexType>
```

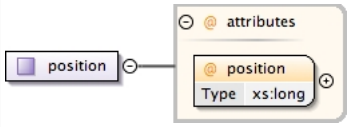
Complex Type `mif:baseLocation`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A location on a sequence. Both begin and end can be a defined position, a fuzzy position, or undetermined.

Diagram	
Used by	Elements mif:abstractFeature/mif:featureRangeList/mif:featureRange, mif:feature/mif:featureRangeList/mif:featureRange
Model	mif:startStatus , (mif:begin | mif:beginInterval) , mif:endStatus , (mif:end | mif:endInterval) , mif:isLink{0,1} , mif:resultingSequence{0,1} , mif:participantRef{0,1}
Children	mif:begin, mif:beginInterval, mif:end, mif:endInterval, mif:endStatus, mif:isLink, mif:participantRef, mif:resultingSequence, mif:startStatus
Source	`<xs:complexType name="baseLocation">` `  <xs:annotation>` `  <xs:documentation>A location on a sequence. Both begin and end can be a defined position, a fuzzy position, or undetermined.</xs:documentation>` `  </xs:annotation>` `  <xs:sequence>` `  <xs:sequence>` `  <xs:element name="startStatus" type="mif:cvType">` `  <xs:annotation>` `  <xs:documentation>Attribute of the start positions, e.g. "certain" or "n-terminal"</xs:documentation>` `  </xs:annotation>` `  </xs:element>` `  <xs:choice minOccurs="0">` `  <xs:element name="begin" type="mif:position">` `  <xs:annotation>` ` <xs:documentation>The integer position gives the begin position of the feature. The first base or amino acid is position 1. In combination with the numeric value, the attribute 'status' allows to express fuzzy positions, e.g. 'less than 4'. Negative positions can be used to describe promoter regions when the interactor is a gene but should not be allowed for proteins</xs:documentation>` ` </xs:annotation>` ` </xs:element>`

```
        <xs:element name="beginInterval" type="mif:interval">
          <xs:annotation>
            <xs:documentation>The begin position may be varying or unclear, but localisable to a
 certain range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter
 regions when the interactor is a gene but should not be allowed for proteins</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:choice>
    </xs:sequence>
    <xs:sequence>
      <xs:element name="endStatus" type="mif:cvType">
        <xs:annotation>
          <xs:documentation>Attribute of the end positions, e.g. "certain" or "c-terminal"</
xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:choice minOccurs="0">
        <xs:element name="end" type="mif:position">
          <xs:annotation>
            <xs:documentation>The integer position gives the end position of the feature. The
 first base or amino acid is position 1. In combination with the numeric value, the attribute
 'status' allows to express fuzzy positions, e.g. 'more than 400'. Negative positions can be used
 to describe promoter regions when the interactor is a gene but should not be allowed for proteins</
xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="endInterval" type="mif:interval">
          <xs:annotation>
            <xs:documentation>The end position may be varying or unclear, but localisable to a
 certain range. Usually written as e.g. 3..5. Negative positions can be used to describe promoter
 regions when the interactor is a gene but should not be allowed for proteins</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:choice>
    </xs:sequence>
    <xs:element name="isLink" type="xs:boolean" default="false" minOccurs="0">
      <xs:annotation>
        <xs:documentation>True if the described feature is a linking feature connecting two amino
 acids rather than extending along the sequence. 'begin' references the first amino acid, 'end' the
 second. Standard example is a disulfide bridge. Does not reference another feature, therefore is
 only suitable for linking features on the same amino acid chain.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="resultingSequence" type="mif:resultingSequenceType" minOccurs="0"
 maxOccurs="1">
      <xs:annotation>
        <xs:documentation>The resultingSequence gives some information about the sequence changes.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="participantRef" type="xs:int" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>References a participant described in the entry. The participantRef is
 aimed at describing complex binding sites such as composite binding sites where the participant
 is an interaction and the binding site ranges has to specify which participant in the subunit it
 refers to.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:position`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Used by	Elements mif:baseLocation/mif:begin, mif:baseLocation/mif:end

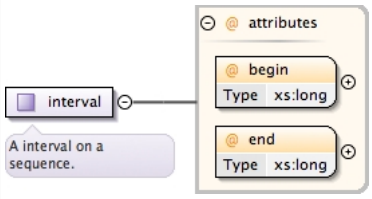
Attributes

QName	Type	Fixed	Default	Use
position	xs:long			required

Source

```
<xs:complexType name="position">
  <xs:attribute name="position" type="xs:long" use="required"/>
</xs:complexType>
```

Complex Type `mif:interval`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A interval on a sequence.
Diagram	
Used by	Elements mif:baseLocation/mif:beginInterval, mif:baseLocation/mif:endInterval

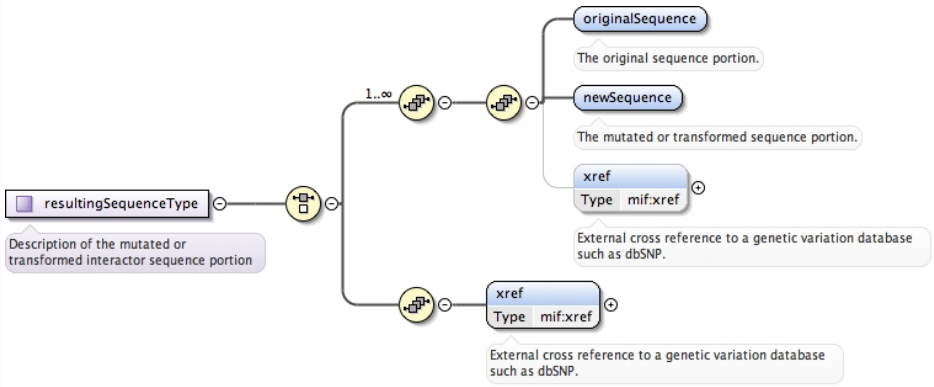
Attributes

QName	Type	Fixed	Default	Use
begin	xs:long			required
end	xs:long			required

Source

```
<xs:complexType name="interval">
  <xs:annotation>
    <xs:documentation>A interval on a sequence.</xs:documentation>
  </xs:annotation>
  <xs:attribute name="begin" type="xs:long" use="required"/>
  <xs:attribute name="end" type="xs:long" use="required"/>
</xs:complexType>
```

Complex Type `mif:resultingSequenceType`

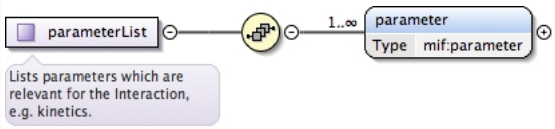
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Description of the mutated or transformed interactor sequence portion
Diagram	
Used by	Element mif:baseLocation/mif:resultingSequence
Model	(mif:originalSequence , mif:newSequence , mif:xref{0,1}) | (mif:xref)
Children	mif:newSequence, mif:originalSequence, mif:xref

Source

```
<xs:complexType name="resultingSequenceType">
  <xs:annotation>
    <xs:documentation>Description of the mutated or transformed interactor sequence portion</
xs:documentation>
  </xs:annotation>
  <xs:choice minOccurs="1" maxOccurs="1">
    <xs:sequence maxOccurs="unbounded">
      <xs:sequence>
        <xs:element name="originalSequence" minOccurs="1" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>The original sequence portion.</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="newSequence" minOccurs="1" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>The mutated or transformed sequence portion.</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="xref" type="mif:xref" minOccurs="0">
          <xs:annotation>
            <xs:documentation>External cross reference to a genetic variation database such as
 dbSNP.</xs:documentation>
```

```
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:sequence>
    <xs:sequence>
      <xs:element name="xref" type="mif:xref" minOccurs="1" maxOccurs="1">
        <xs:annotation>
          <xs:documentation>External cross reference to a genetic variation database such as
 dbSNP.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:choice>
</xs:complexType>
```

Complex Type `mif:parameterList`

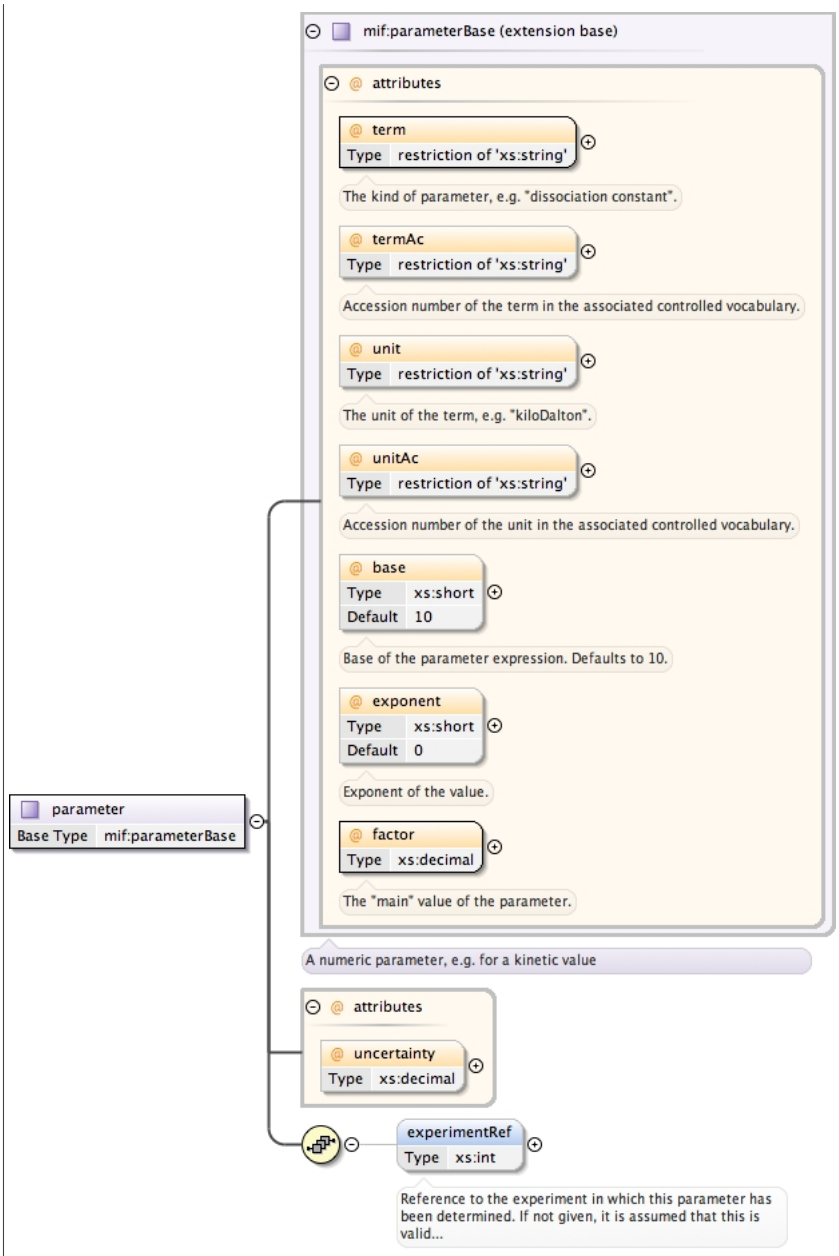
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Lists parameters which are relevant for the Interaction, e.g. kinetics.
Diagram	
Used by	Elements mif:feature/mif:parameterList, mif:interaction/mif:parameterList, mif:participant/mif:parameterList
Model	mif:parameter+
Children	mif:parameter

Source	`<xs:complexType name="parameterList">`
	`  <xs:annotation>`
	`  <xs:documentation>Lists parameters which are relevant for the Interaction, e.g. kinetics.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="parameter" type="mif:parameter" maxOccurs="unbounded"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:parameter`

Namespace	http://psi.hupo.org/mi/mif300

Diagram



Type	extension of mif:parameterBase
Type hierarchy	• mif:parameterBase • mif:parameter
Used by	Element mif:parameterList/mif:parameter
Model	mif:experimentRef{0,1}
Children	mif:experimentRef

Attributes

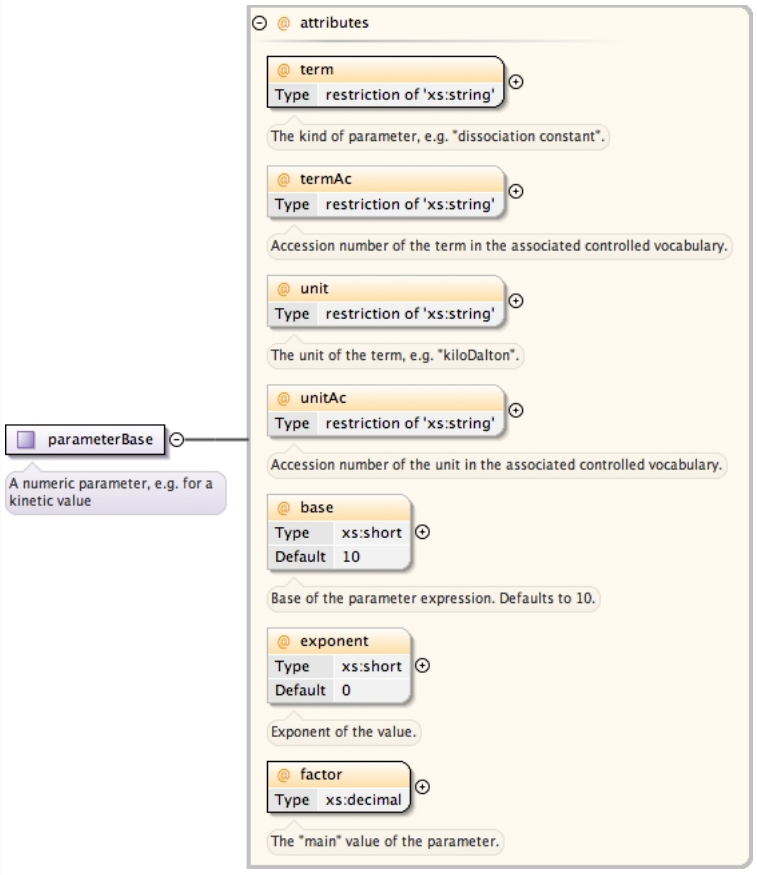
QName	Type	Fixed	Default	Use
base	xs:short		10	optional
	`Base of the parameter expression. Defaults to 10.`			
exponent	xs:short		0	optional
	`Exponent of the value.`			
factor	xs:decimal			required
	`The "main" value of the parameter.`			
term	restriction of xs:string			required
	`The kind of parameter, e.g. "dissociation constant".`			

	QName	Type	Fixed	Default	Use
	termAc	restriction of xs:string			optional
		Accession number of the term in the associated controlled vocabulary.			
	uncertainty	xs:decimal			optional
	unit	restriction of xs:string			optional
		The unit of the term, e.g. "kiloDalton".			
	unitAc	restriction of xs:string			optional
		Accession number of the unit in the associated controlled vocabulary.			

Source

```
<xs:complexType name="parameter">
  <xs:complexContent>
    <xs:extension base="mif:parameterBase">
      <xs:sequence>
        <xs:element name="experimentRef" type="xs:int" minOccurs="0" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>Reference to the experiment in which this parameter has been
 determined. If not given, it is assumed that this is valid for all experiments attached to the
 interaction.</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
      <xs:attribute name="uncertainty" type="xs:decimal" use="optional"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Complex Type `mif:parameterBase`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A numeric parameter, e.g. for a kinetic value
Diagram	
Used by	Complex Types mif:abstractParameter, mif:parameter

Attributes

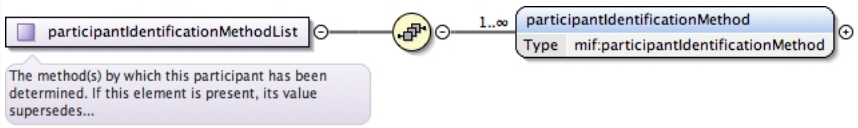
QName	Type	Fixed	Default	Use
base	xs:short		10	optional
	Base of the parameter expression. Defaults to 10.			
exponent	xs:short		0	optional
	Exponent of the value.			
factor	xs:decimal			required
	The "main" value of the parameter.			
term	restriction of xs:string			required
	The kind of parameter, e.g. "dissociation constant".			
termAc	restriction of xs:string			optional
	Accession number of the term in the associated controlled vocabulary.			
unit	restriction of xs:string			optional
	The unit of the term, e.g. "kiloDalton".			
unitAc	restriction of xs:string			optional
	Accession number of the unit in the associated controlled vocabulary.			

Source

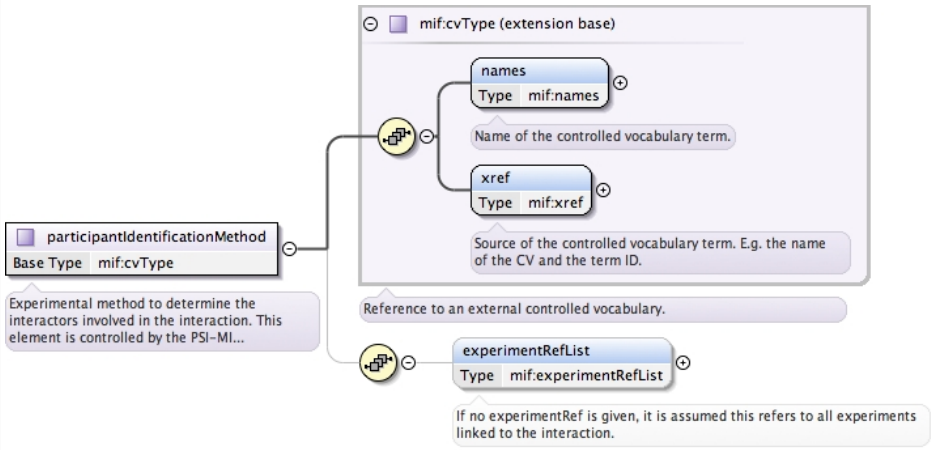
```
<xs:complexType name="parameterBase">
  <xs:annotation>
    <xs:documentation>A numeric parameter, e.g. for a kinetic value</xs:documentation>
  </xs:annotation>
  <xs:attribute name="term" use="required">
    <xs:annotation>
      <xs:documentation>The kind of parameter, e.g. "dissociation constant".</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="termAc" use="optional">
    <xs:annotation>
      <xs:documentation>Accession number of the term in the associated controlled vocabulary.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="unit" use="optional">
    <xs:annotation>
      <xs:documentation>The unit of the term, e.g. "kiloDalton".</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="unitAc" use="optional">
    <xs:annotation>
      <xs:documentation>Accession number of the unit in the associated controlled vocabulary.</
xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="base" type="xs:short" use="optional" default="10">
    <xs:annotation>
      <xs:documentation>Base of the parameter expression. Defaults to 10.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="exponent" type="xs:short" use="optional" default="0">
    <xs:annotation>
      <xs:documentation>Exponent of the value.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
```

```
  <xs:attribute name="factor" type="xs:decimal" use="required">
    <xs:annotation>
      <xs:documentation>The "main" value of the parameter.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Complex Type `mif:participantIdentificationMethodList`

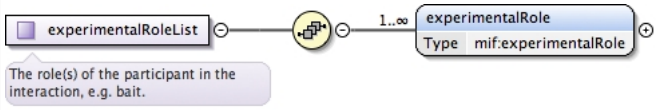
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The method(s) by which this participant has been determined. If this element is present, its value supersedes experimentDescription/ participantIdentificationMethod.
Diagram	
Used by	Element mif:participant/mif:participantIdentificationMethodList
Model	mif:participantIdentificationMethod+
Children	mif:participantIdentificationMethod
Source	<xs:complexType name="participantIdentificationMethodList"> <xs:annotation> <xs:documentation>The method(s) by which this participant has been determined. If this element is present, its value supersedes experimentDescription/ participantIdentificationMethod.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="participantIdentificationMethod" type="mif:participantIdentificationMethod" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:participantIdentificationMethod`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Experimental method to determine the interactors involved in the interaction. This element is controlled by the PSI-MI controlled vocabulary "participant identification method", root term id MI:0002.
Diagram	
Type	extension of mif:cvType
Type hierarchy	• mif:cvType • mif:participantIdentificationMethod
Used by	Element mif:participantIdentificationMethodList/mif:participantIdentificationMethod
Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref
Source	<xs:complexType name="participantIdentificationMethod"> <xs:annotation> <xs:documentation>Experimental method to determine the interactors involved in the interaction. This element is controlled by the PSI-MI controlled vocabulary "participant identification method", root term id MI:0002.</xs:documentation>

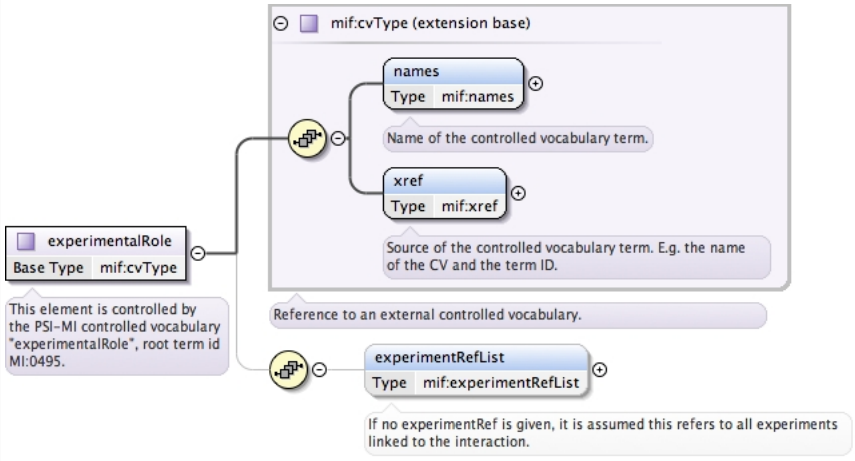
```
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="mif:cvType">
      <xs:sequence minOccurs="0">
        <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">
          <xs:annotation>
            <xs:documentation>If no experimentRef is given, it is assumed this refers to all
 experiments linked to the interaction.</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Complex Type `mif:experimentalRoleList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`The role(s) of the participant in the interaction, e.g. bait.`
Diagram	
Used by	Element mif:participant/mif:experimentalRoleList
Model	mif:experimentalRole+
Children	mif:experimentalRole

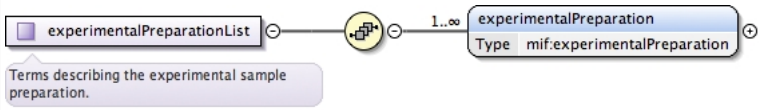
Source	`<xs:complexType name="experimentalRoleList">`
	`  <xs:annotation>`
	`  <xs:documentation>The role(s) of the participant in the interaction, e.g. bait.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="experimentalRole" type="mif:experimentalRole" maxOccurs="unbounded"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:experimentalRole`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`This element is controlled by the PSI-MI controlled vocabulary "experimentalRole", root term id MI:0495.`
Diagram	
Type	extension of mif:cvType
Type hierarchy	• mif:cvType • mif:experimentalRole
Used by	Element mif:experimentalRoleList/mif:experimentalRole
Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref
Source	`<xs:complexType name="experimentalRole">` `  <xs:annotation>`

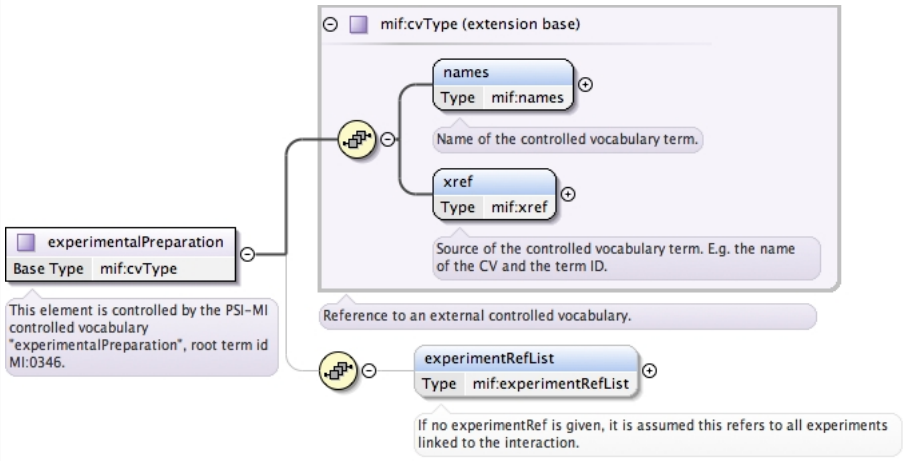
```
    <xs:documentation>This element is controlled by the PSI-MI controlled vocabulary
 "experimentalRole", root term id MI:0495.</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="mif:cvType">
      <xs:sequence minOccurs="0">
        <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0">
          <xs:annotation>
            <xs:documentation>If no experimentRef is given, it is assumed this refers to all
 experiments linked to the interaction.</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Complex Type `mif:experimentalPreparationList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Terms describing the experimental sample preparation.
Diagram	
Used by	Element mif:participant/mif:experimentalPreparationList
Model	mif:experimentalPreparation+
Children	mif:experimentalPreparation

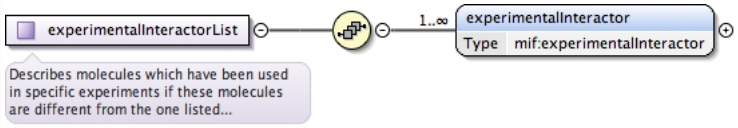
Source	`<xs:complexType name="experimentalPreparationList">`
	`  <xs:annotation>`
	`  <xs:documentation>Terms describing the experimental sample preparation.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="experimentalPreparation" type="mif:experimentalPreparation"`
	`  maxOccurs="unbounded"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:experimentalPreparation`

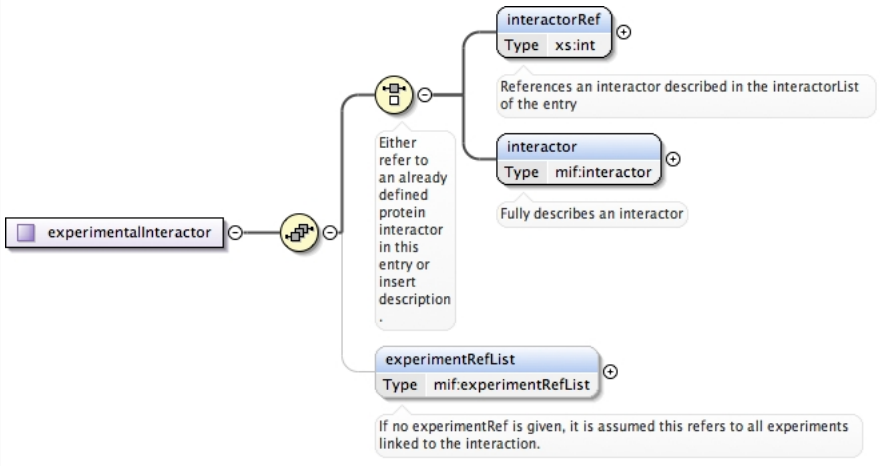
Namespace	http://psi.hupo.org/mi/mif300
Annotations	This element is controlled by the PSI-MI controlled vocabulary "experimentalPreparation", root term id MI:0346.
Diagram	
Type	extension of mif:cvType
Type hierarchy	• mif:cvType • mif:experimentalPreparation
Used by	Element mif:experimentalPreparationList/mif:experimentalPreparation
Model	mif:names , mif:xref , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:names, mif:xref

Source	<xs:complexType name="experimentalPreparation"> <xs:annotation> <xs:documentation>This element is controlled by the PSI-MI controlled vocabulary "experimentalPreparation", root term id MI:0346.</xs:documentation> </xs:annotation> <xs:complexContent> <xs:extension base="mif:cvType"> <xs:sequence minOccurs="0"> <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"> <xs:annotation> <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:extension> </xs:complexContent> </xs:complexType>

Complex Type `mif:experimentalInteractorList`

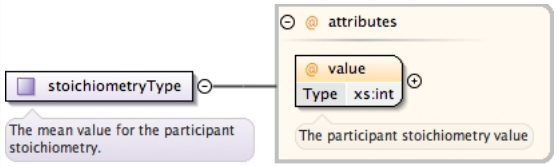
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes molecules which have been used in specific experiments if these molecules are different from the one listed as interactors. Example: The author of a paper makes a statement about human proteins, but has really worked with mouse proteins. In this case the human protein would be the main interactor, while the experimentalForm would be the mouse protein listed in this element. Optionally this can refer to the experiment(s) in which this form has been used.
Diagram	
Used by	Element mif:participant/mif:experimentalInteractorList
Model	mif:experimentalInteractor+
Children	mif:experimentalInteractor
Source	<xs:complexType name="experimentalInteractorList"> <xs:annotation> <xs:documentation>Describes molecules which have been used in specific experiments if these molecules are different from the one listed as interactors. Example: The author of a paper makes a statement about human proteins, but has really worked with mouse proteins. In this case the human protein would be the main interactor, while the experimentalForm would be the mouse protein listed in this element. Optionally this can refer to the experiment(s) in which this form has been used.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="experimentalInteractor" type="mif:experimentalInteractor" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:experimentalInteractor`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	

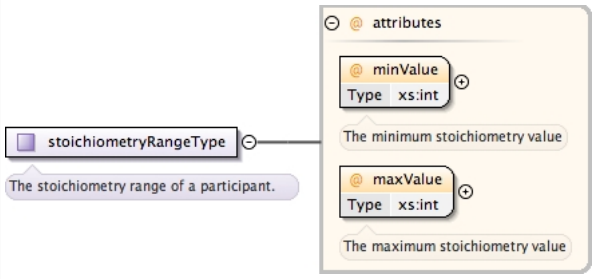
Used by	Element mif:experimentalInteractorList/mif:experimentalInteractor
Model	(mif:interactorRef | mif:interactor) , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:interactor, mif:interactorRef
Source	<xs:complexType name="experimentalInteractor"> <xs:sequence> <xs:choice> <xs:annotation> <xs:documentation>Either refer to an already defined protein interactor in this entry or insert description.</xs:documentation> </xs:annotation> <xs:element name="interactorRef" type="xs:int"> <xs:annotation> <xs:documentation>References an interactor described in the interactorList of the entry</xs:documentation> </xs:annotation> </xs:element> <xs:element name="interactor" type="mif:interactor"> <xs:annotation> <xs:documentation>Fully describes an interactor</xs:documentation> </xs:annotation> </xs:element> </xs:choice> <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"> <xs:annotation> <xs:documentation>If no experimentRef is given, it is assumed this refers to all experiments linked to the interaction.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType>

Complex Type `mif:stoichiometryType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The mean value for the participant stoichiometry.
Diagram	
Used by	Elements mif:abstractParticipant/mif:stoichiometry, mif:participant/mif:stoichiometry
Attributes	**QName** | **Type** | **Fixed** | **Default** | **Use** **value** | xs:int | | | required The participant stoichiometry value
Source	<xs:complexType name="stoichiometryType"> <xs:annotation> <xs:documentation>The mean value for the participant stoichiometry.</xs:documentation> </xs:annotation> <xs:attribute name="value" type="xs:int" use="required"> <xs:annotation> <xs:documentation>The participant stoichiometry value</xs:documentation> </xs:annotation> </xs:attribute> </xs:complexType>

Complex Type `mif:stoichiometryRangeType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The stoichiometry range of a participant.

Diagram	
Used by	Elements mif:abstractParticipant/mif:stoichiometryRange, mif:participant/mif:stoichiometryRange

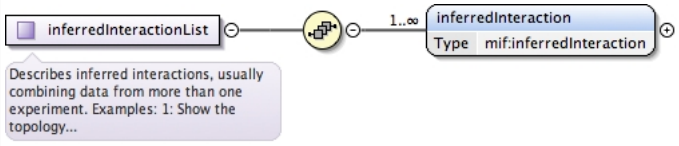
Attributes

QName	Type	Fixed	Default	Use
maxValue	xs:int			required
	The maximum stoichiometry value			
minValue	xs:int			required
	The minimum stoichiometry value			

Source

```
<xs:complexType name="stoichiometryRangeType">
  <xs:annotation>
    <xs:documentation>The stoichiometry range of a participant.</xs:documentation>
  </xs:annotation>
  <xs:attribute name="minValue" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>The minimum stoichiometry value</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="maxValue" type="xs:int" use="required">
    <xs:annotation>
      <xs:documentation>The maximum stoichiometry value</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Complex Type `mif:inferredInteractionList`

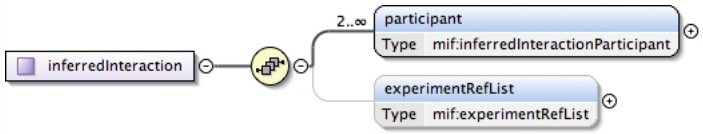
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Describes inferred interactions, usually combining data from more than one experiment. Examples: 1: Show the topology of binary interactions within a complex. 2: Interaction inferred from multiple experiments which on their own would not support the interaction. Example: A-B in experiment 1, B-C- in experiment 2, A-C is the inferred interaction.
Diagram	
Used by	Element mif:interaction/mif:inferredInteractionList
Model	mif:inferredInteraction+
Children	mif:inferredInteraction

Source

```
<xs:complexType name="inferredInteractionList">
  <xs:annotation>
    <xs:documentation>Describes inferred interactions, usually combining data from more than one
 experiment. Examples: 1: Show the topology of binary interactions within a complex. 2: Interaction
 inferred from multiple experiments which on their own would not support the interaction. Example:
 A-B in experiment 1, B-C- in experiment 2, A-C is the inferred interaction.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="inferredInteraction" type="mif:inferredInteraction" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

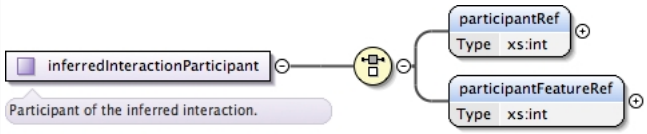
Complex Type `mif:inferredInteraction`

Namespace	http://psi.hupo.org/mi/mif300

Diagram	
Used by	Element mif:inferredInteractionList/mif:inferredInteraction
Model	mif:participant{2,unbounded} , mif:experimentRefList{0,1}
Children	mif:experimentRefList, mif:participant

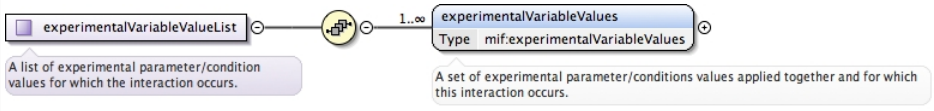
Source	`<xs:complexType name="inferredInteraction">`
	`  <xs:sequence>`
	`  <xs:element name="participant" type="mif:inferredInteractionParticipant" minOccurs="2" maxOccurs="unbounded"/>`
	`  <xs:element name="experimentRefList" type="mif:experimentRefList" minOccurs="0"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:inferredInteractionParticipant`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Participant of the inferred interaction.
Diagram	
Used by	Element mif:inferredInteraction/mif:participant
Model	mif:participantRef | mif:participantFeatureRef
Children	mif:participantFeatureRef, mif:participantRef

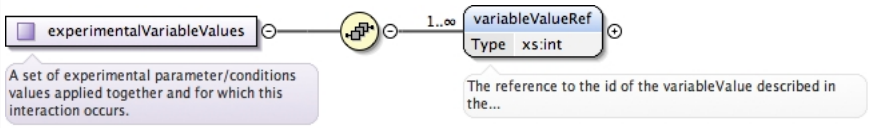
Source	`<xs:complexType name="inferredInteractionParticipant">`
	`  <xs:annotation>`
	`  <xs:documentation>Participant of the inferred interaction.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:choice>`
	`  <xs:element name="participantRef" type="xs:int"/>`
	`  <xs:element name="participantFeatureRef" type="xs:int"/>`
	`  </xs:choice>`
	`</xs:complexType>`

Complex Type `mif:experimentalVariableValueList`

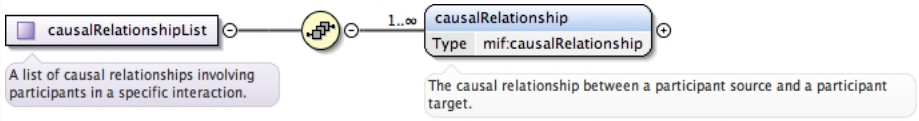
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of experimental parameter/condition values for which the interaction occurs.
Diagram	
Used by	Element mif:interaction/mif:experimentalVariableValueList
Model	mif:experimentalVariableValues+
Children	mif:experimentalVariableValues

Source	`<xs:complexType name="experimentalVariableValueList">`
	`  <xs:annotation>`
	`  <xs:documentation>A list of experimental parameter/condition values for which the interaction occurs.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="experimentalVariableValues" minOccurs="1" maxOccurs="unbounded" type="mif:experimentalVariableValues">`
	`  <xs:annotation>`
	`  <xs:documentation>A set of experimental parameter/conditions values applied together and for which this interaction occurs.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:experimentalVariableValues`

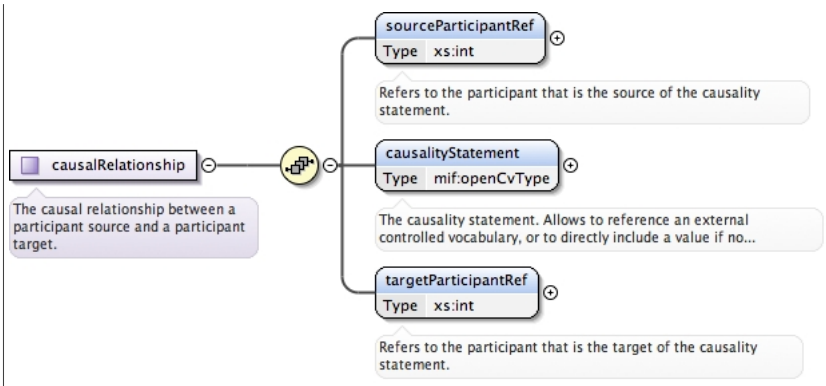
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A set of experimental parameter/conditions values applied together and for which this interaction occurs.
Diagram	
Used by	Element mif:experimentalVariableValueList/mif:experimentalVariableValues
Model	mif:variableValueRef+
Children	mif:variableValueRef
Source	<xs:complexType name="experimentalVariableValues"> <xs:annotation> <xs:documentation>A set of experimental parameter/conditions values applied together and for which this interaction occurs.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="variableValueRef" minOccurs="1" maxOccurs="unbounded" type="xs:int"> <xs:annotation> <xs:documentation>The reference to the id of the variableValue described in the variableParameterList/variableParameter/variableParameterValueList of the experiment.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType>

Complex Type `mif:causalRelationshipList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of causal relationships involving participants in a specific interaction.
Diagram	
Used by	Elements mif:abstractInteraction/mif:causalRelationshipList, mif:interaction/mif:causalRelationshipList
Model	mif:causalRelationship+
Children	mif:causalRelationship
Source	<xs:complexType name="causalRelationshipList"> <xs:annotation> <xs:documentation>A list of causal relationships involving participants in a specific interaction.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="causalRelationship" type="mif:causalRelationship" minOccurs="1" maxOccurs="unbounded"> <xs:annotation> <xs:documentation>The causal relationship between a participant source and a participant target.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType>

Complex Type `mif:causalRelationship`

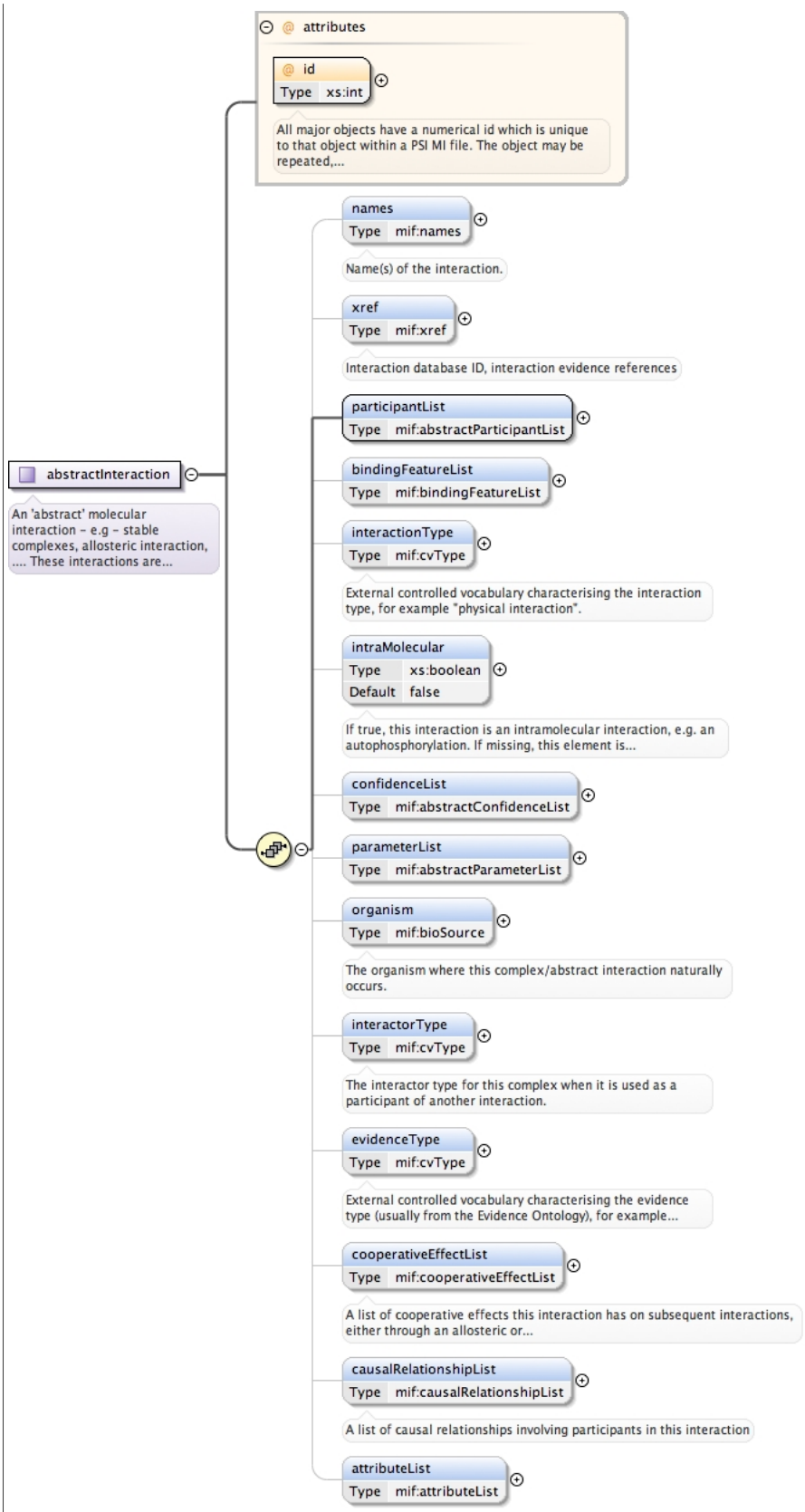
Namespace	http://psi.hupo.org/mi/mif300
Annotations	The causal relationship between a participant source and a participant target.

Diagram	
Used by	Element mif:causalRelationshipList/mif:causalRelationship
Model	mif:sourceParticipantRef , mif:causalityStatement , mif:targetParticipantRef
Children	mif:causalityStatement, mif:sourceParticipantRef, mif:targetParticipantRef

Source	`<xs:complexType name="causalRelationship">`
	`  <xs:annotation>`
	`  <xs:documentation>The causal relationship between a participant source and a participant target.</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="sourceParticipantRef" type="xs:int" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the participant that is the source of the causality statement.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  <xs:element name="causalityStatement" type="mif:openCvType" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>The causality statement. Allows to reference an external controlled vocabulary, or to directly include a value if no suitable external definition is available.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  <xs:element name="targetParticipantRef" type="xs:int" minOccurs="1" maxOccurs="1">`
	`  <xs:annotation>`
	`  <xs:documentation>Refers to the participant that is the target of the causality statement.</xs:documentation>`
	`  </xs:annotation>`
	`  </xs:element>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:abstractInteraction`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	An 'abstract' molecular interaction - e.g - stable complexes, allosteric interaction, ... These interactions are abstracted from their experimental context and represent biological entities.

Diagram	
Used by	Element mif:interactionList/mif:abstractInteraction
Model	mif:names{0,1} , mif:xref{0,1} , mif:participantList , mif:bindingFeatureList{0,1} , mif:interactionType{0,1} , mif:intraMolecular{0,1} , mif:confidenceList{0,1} , mif:parameterList{0,1} , mif:organism{0,1} , mif:interactorType{0,1} , mif:evidenceType{0,1} , mif:cooperativeEffectList{0,1} , mif:causalRelationshipList{0,1} , mif:attributeList{0,1}

Children

mif:attributeList, mif:bindingFeatureList, mif:causalRelationshipList, mif:confidenceList, mif:cooperativeEffectList, mif:evidenceType, mif:interactionType, mif:interactorType, mif:intraMolecular, mif:names, mif:organism, mif:parameterList, mif:participantList, mif:xref

Attributes

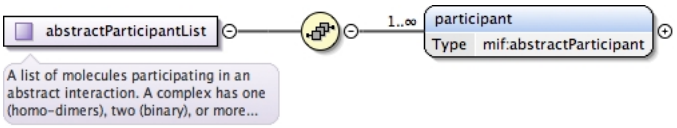
QName	Type	Fixed	Default	Use
id	xs:int			required
	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.			

Source

```
<xs:complexType name="abstractInteraction">
  <xs:annotation>
    <xs:documentation>An 'abstract' molecular interaction - e.g - stable complexes, allosteric
 interaction, .... These interactions are abstracted from their experimental context and represent
 biological entities.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Name(s) of the interaction.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Interaction database ID, interaction evidence references</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="participantList" type="mif:abstractParticipantList"/>
    <xs:element name="bindingFeatureList" type="mif:bindingFeatureList" minOccurs="0"/>
    <xs:element name="interactionType" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>External controlled vocabulary characterising the interaction type, for
 example "physical interaction".</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="intraMolecular" type="xs:boolean" default="false" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If true, this interaction is an intramolecular interaction, e.g. an
 autophosphorylation. If missing, this element is assumed to be false.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="confidenceList" type="mif:abstractConfidenceList" minOccurs="0"/>
    <xs:element name="parameterList" type="mif:abstractParameterList" minOccurs="0"/>
    <xs:element name="organism" type="mif:bioSource" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The organism where this complex/abstract interaction naturally occurs.</
xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="interactorType" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The interactor type for this complex when it is used as a participant of
 another interaction.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="evidenceType" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>External controlled vocabulary characterising the evidence type
 (usually from the Evidence Ontology), for example "physical interaction evidence, inferred from
 literature".</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="cooperativeEffectList" type="mif:cooperativeEffectList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A list of cooperative effects this interaction has on subsequent
 interactions, either through an allosteric or pre-assembly effect.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="causalRelationshipList" type="mif:causalRelationshipList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>A list of causal relationships involving participants in this
 interaction</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required">
    <xs:annotation>
```

```
      <xs:documentation>All major objects have a numerical id which is unique to that object within
 a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</
xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

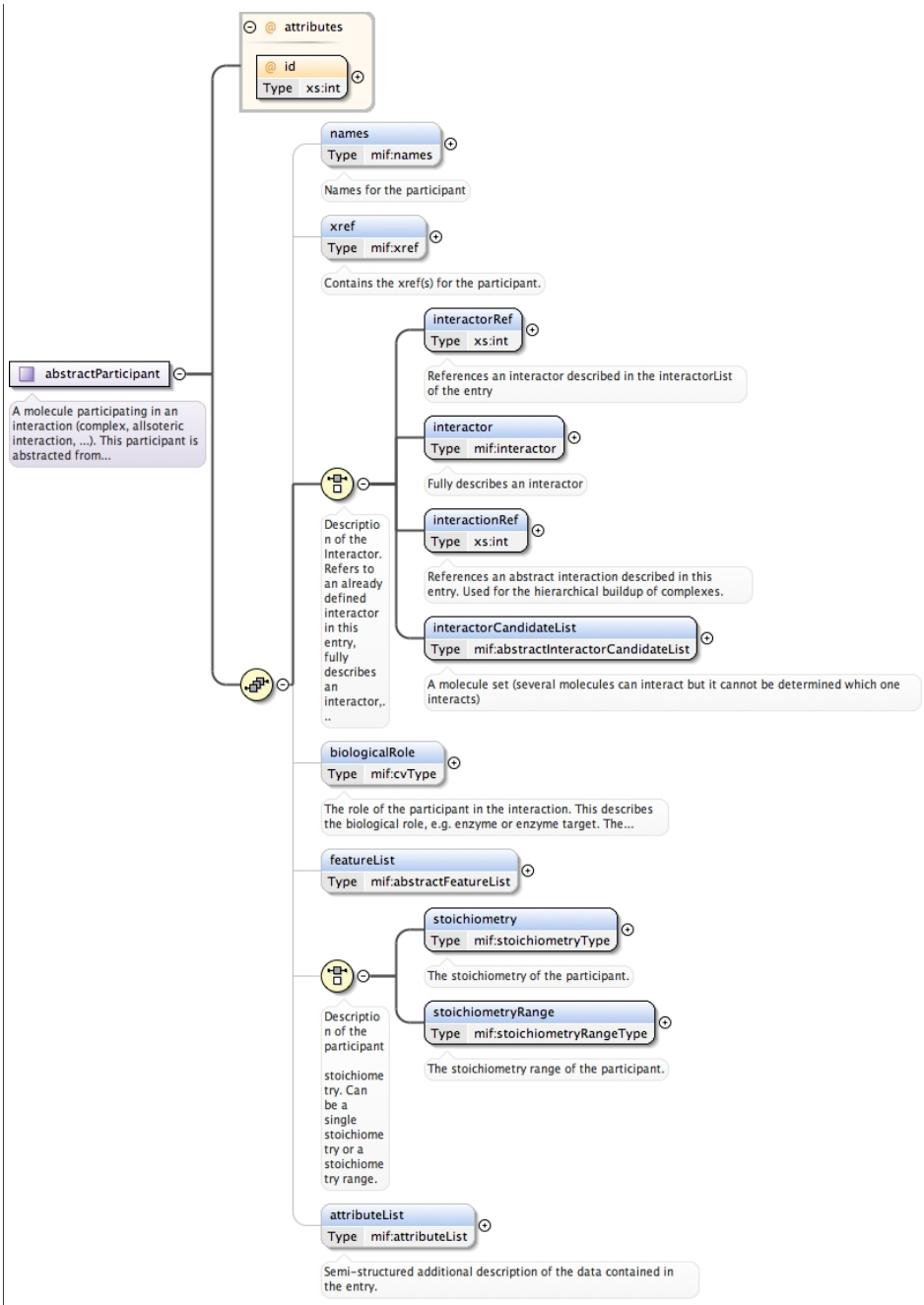
Complex Type `mif:abstractParticipantList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of molecules participating in an abstract interaction. A complex has one (homo-dimers), two (binary), or more (complexes) participants. As the interaction is abstracted from the experimental context, the participants are also abstracted from any experimental context.
Diagram	
Used by	Element mif:abstractInteraction/mif:participantList
Model	mif:participant+
Children	mif:participant
Source	<xs:complexType name="abstractParticipantList"> <xs:annotation> <xs:documentation>A list of molecules participating in an abstract interaction. A complex has one (homo-dimers), two (binary), or more (complexes) participants. As the interaction is abstracted from the experimental context, the participants are also abstracted from any experimental context.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="participant" type="mif:abstractParticipant" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:abstractParticipant`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A molecule participating in an interaction (complex, allsoteric interaction, ...). This participant is abstracted from its experimental context.

Diagram



Used by	Element mif:abstractParticipantList/mif:participant
Model	mif:names{0,1} , mif:xref{0,1} , (mif:interactorRef | mif:interactor | mif:interactionRef | mif:interactorCandidateList) , mif:biologicalRole{0,1} , mif:featureList{0,1} , (mif:stoichiometry | mif:stoichiometryRange) , mif:attributeList{0,1}
Children	mif:attributeList, mif:biologicalRole, mif:featureList, mif:interactionRef, mif:interactor, mif:interactorCandidateList, mif:interactorRef, mif:names, mif:stoichiometry, mif:stoichiometryRange, mif:xref

Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

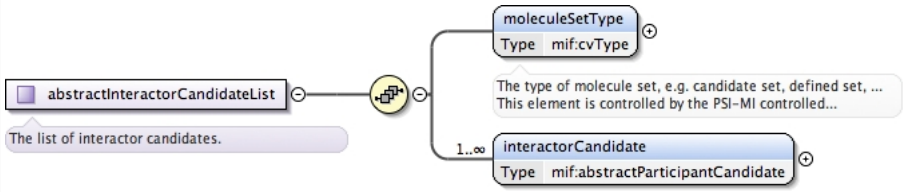
Source

```
<xs:complexType name="abstractParticipant">
  <xs:annotation>
    <xs:documentation>A molecule participating in an interaction (complex, allsoteric
 interaction, ...). This participant is abstracted from its experimental context.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Names for the participant</xs:documentation>
      </xs:annotation>
    </xs:element>
```

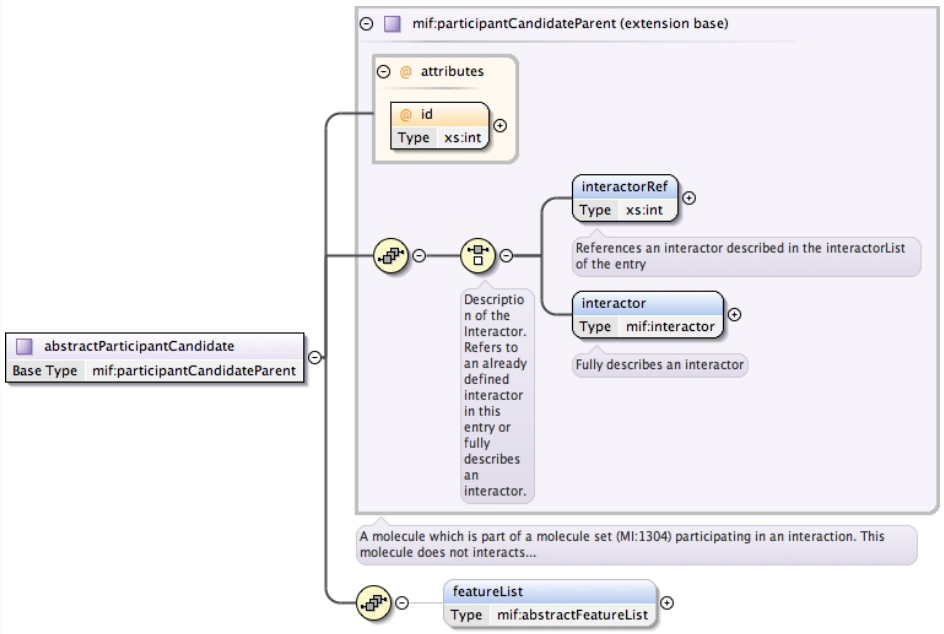
```
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Contains the xref(s) for the participant.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:choice>
      <xs:annotation>
        <xs:documentation>Description of the Interactor. Refers to an already defined interactor in
 this entry, fully describes an interactor, references another interaction defined in this entry, to
 allow the hierarchical building up of complexes from subunits, or describe a molecule set (several
 molecules can interact but it cannot be determined which one interacts)..</xs:documentation>
      </xs:annotation>
      <xs:element name="interactorRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an interactor described in the interactorList of the entry</
xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactor" type="mif:interactor">
        <xs:annotation>
          <xs:documentation>Fully describes an interactor</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactionRef" type="xs:int">
        <xs:annotation>
          <xs:documentation>References an abstract interaction described in this entry. Used for the
 hierarchical buildup of complexes.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="interactorCandidateList" type="mif:abstractInteractorCandidateList">
        <xs:annotation>
          <xs:documentation>A molecule set (several molecules can interact but it cannot be
 determined which one interacts)</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
    <xs:element name="biologicalRole" type="mif:cvType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>The role of the participant in the interaction. This describes the
 biological role, e.g. enzyme or enzyme target. The experimental role of the participant, e.g.
 'bait', is shown in experimentalForm. This element is controlled by the PSI-MI controlled
 vocabulary "biologicalRole", root term id MI:0500.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureList" type="mif:abstractFeatureList" minOccurs="0"/>
    <xs:choice minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description of the participant stoichiometry. Can be a single
 stoichiometry or a stoichiometry range.</xs:documentation>
      </xs:annotation>
      <xs:element name="stoichiometry" type="mif:stoichiometryType">
        <xs:annotation>
          <xs:documentation>The stoichiometry of the participant.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="stoichiometryRange" type="mif:stoichiometryRangeType">
        <xs:annotation>
          <xs:documentation>The stoichiometry range of the participant.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the data contained in the
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required"/>
</xs:complexType>
```

Complex Type `mif:abstractInteractorCandidateList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	The list of interactor candidates.

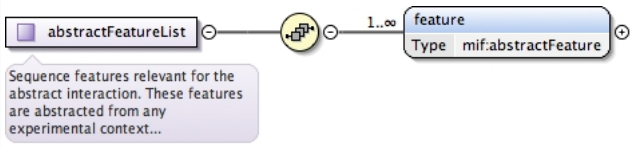
Diagram	
Used by	Element mif:abstractParticipant/mif:interactorCandidateList
Model	mif:moleculeSetType , mif:interactorCandidate+
Children	mif:interactorCandidate, mif:moleculeSetType
Source	<xs:complexType name="abstractInteractorCandidateList"> <xs:annotation> <xs:documentation>The list of interactor candidates.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="moleculeSetType" type="mif:cvType" minOccurs="1"> <xs:annotation> <xs:documentation>The type of molecule set, e.g. candidate set, defined set, ... This element is controlled by the PSI-MI controlled vocabulary "interactor", root term id MI:1304.</xs:documentation> </xs:annotation> </xs:element> <xs:element name="interactorCandidate" type="mif:abstractParticipantCandidate" maxOccurs="unbounded" minOccurs="1"/> </xs:sequence> </xs:complexType>

Complex Type `mif:abstractParticipantCandidate`

Namespace	http://psi.hupo.org/mi/mif300
Diagram	
Type	extension of mif:participantCandidateParent
Type hierarchy	• mif:participantCandidateParent • mif:abstractParticipantCandidate
Used by	Element mif:abstractInteractorCandidateList/mif:interactorCandidate
Model	(mif:interactorRef | mif:interactor) , mif:featureList{0,1}
Children	mif:featureList, mif:interactor, mif:interactorRef
Attributes	**QName** | **Type** | **Fixed** | **Default** | **Use** **id** | xs:int | | | required
Source	<xs:complexType name="abstractParticipantCandidate"> <xs:complexContent>

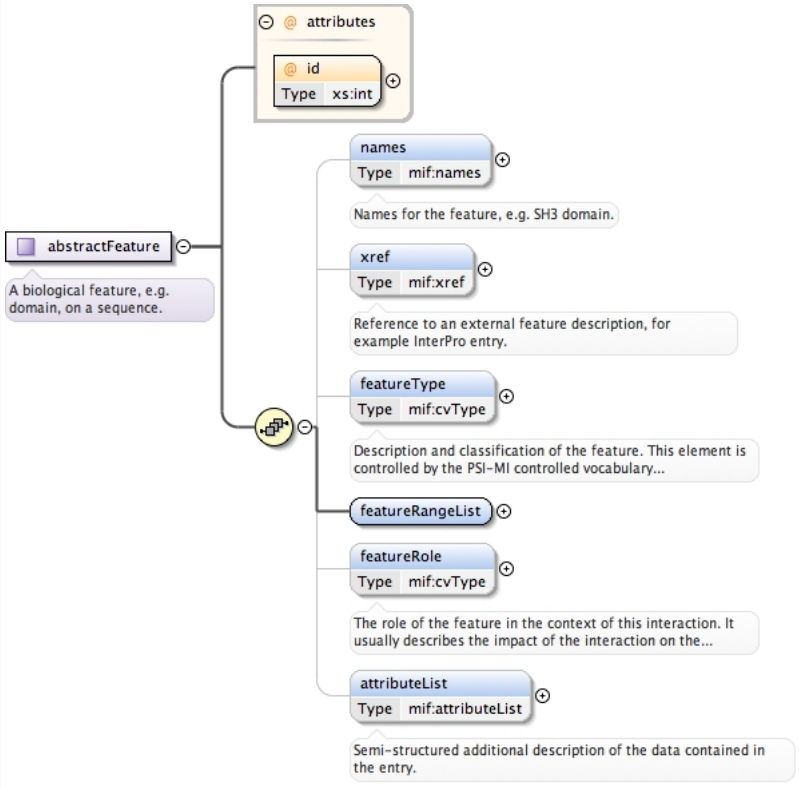
```
    <xs:extension base="mif:participantCandidateParent">
      <xs:sequence>
        <xs:element name="featureList" type="mif:abstractFeatureList" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Complex Type `mif:abstractFeatureList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Sequence features relevant for the abstract interaction. These features are abstracted from any experimental context and are usually binding sites, variants, etc..
Diagram	
Used by	Elements mif:abstractParticipant/mif:featureList, mif:abstractParticipantCandidate/mif:featureList
Model	mif:feature+
Children	mif:feature

Source	`<xs:complexType name="abstractFeatureList">`
	`  <xs:annotation>`
	`  <xs:documentation>Sequence features relevant for the abstract interaction. These features are abstracted from any experimental context and are usually binding sites, variants, etc..</xs:documentation>`
	`  </xs:annotation>`
	`  <xs:sequence>`
	`  <xs:element name="feature" type="mif:abstractFeature" maxOccurs="unbounded"/>`
	`  </xs:sequence>`
	`</xs:complexType>`

Complex Type `mif:abstractFeature`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A biological feature, e.g. domain, on a sequence.
Diagram	

Used by	Element mif:abstractFeatureList/mif:feature
Model	mif:names{0,1} , mif:xref{0,1} , mif:featureType{0,1} , mif:featureRangeList , mif:featureRole{0,1} , mif:attributeList{0,1}
Children	mif:attributeList, mif:featureRangeList, mif:featureRole, mif:featureType, mif:names, mif:xref

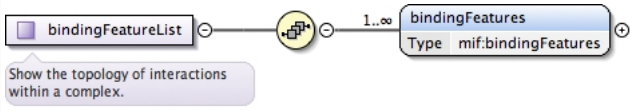
Attributes

QName	Type	Fixed	Default	Use
id	xs:int			required

Source

```
<xs:complexType name="abstractFeature">
  <xs:annotation>
    <xs:documentation>A biological feature, e.g. domain, on a sequence.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="names" type="mif:names" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Names for the feature, e.g. SH3 domain.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="xref" type="mif:xref" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Reference to an external feature description, for example InterPro
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureType" type="mif:cvType" maxOccurs="1" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Description and classification of the feature. This element is controlled
 by the PSI-MI controlled vocabulary "feature", root term id MI:0116.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="featureRangeList">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="featureRange" type="mif:baseLocation" maxOccurs="unbounded">
            <xs:annotation>
              <xs:documentation>Location of the feature on the sequence of the interactor. One
 feature may have more than one featureRange, used e.g. for features which involve sequence
 positions close in the folded, three-dimensional state of a protein, but non-continuous along the
 sequence.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="featureRole" type="mif:cvType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>The role of the feature in the context of this interaction. It usually
 describes the impact of the interaction on the feature. (Ex: resulting-ptm, ...) or the impact of
 the feature on the interaction. (Ex: prerequisite-ptm,...).</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the data contained in the
 entry.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="id" type="xs:int" use="required"/>
</xs:complexType>
```

Complex Type `mif:bindingFeatureList`

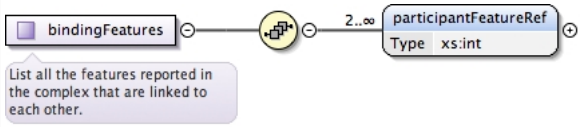
Namespace	http://psi.hupo.org/mi/mif300
Annotations	Show the topology of interactions within a complex.
Diagram	
Used by	Element mif:abstractInteraction/mif:bindingFeatureList
Model	mif:bindingFeatures+
Children	mif:bindingFeatures

Source

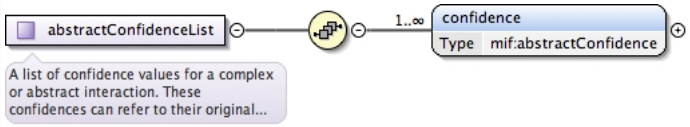
```
<xs:complexType name="bindingFeatureList">
  <xs:annotation>
    <xs:documentation>Show the topology of interactions within a complex.</xs:documentation>
```

```
  </xs:annotation>
  <xs:sequence>
    <xs:element name="bindingFeatures" type="mif:bindingFeatures" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

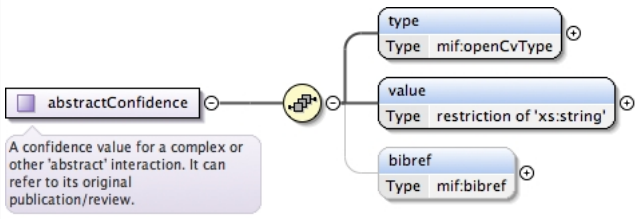
Complex Type `mif:bindingFeatures`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	List all the features reported in the complex that are linked to each other.
Diagram	
Used by	Element mif:bindingFeatureList/mif:bindingFeatures
Model	mif:participantFeatureRef{2,unbounded}
Children	mif:participantFeatureRef
Source	<xs:complexType name="bindingFeatures"> <xs:annotation> <xs:documentation>List all the features reported in the complex that are linked to each other.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="participantFeatureRef" type="xs:int" minOccurs="2" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:abstractConfidenceList`

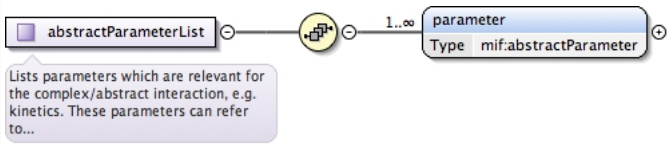
Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of confidence values for a complex or abstract interaction. These confidences can refer to their original publications.>
Diagram	
Used by	Element mif:abstractInteraction/mif:confidenceList
Model	mif:confidence+
Children	mif:confidence
Source	<xs:complexType name="abstractConfidenceList"> <xs:annotation> <xs:documentation>A list of confidence values for a complex or abstract interaction. These confidences can refer to their original publications.></xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="confidence" type="mif:abstractConfidence" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:abstractConfidence`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A confidence value for a complex or other 'abstract' interaction. It can refer to its original publication/review.
Diagram	

Used by	Element mif:abstractConfidenceList/mif:confidence
Model	mif:type , mif:value , mif:bibref{0,1}
Children	mif:bibref, mif:type, mif:value
Source	<xs:complexType name="abstractConfidence"> <xs:annotation> <xs:documentation>A confidence value for a complex or other 'abstract' interaction. It can refer to its original publication/review.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="type" type="mif:openCvType"/> <xs:element name="value"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:element> <xs:element name="bibref" type="mif:bibref" minOccurs="0"/> </xs:sequence> </xs:complexType>

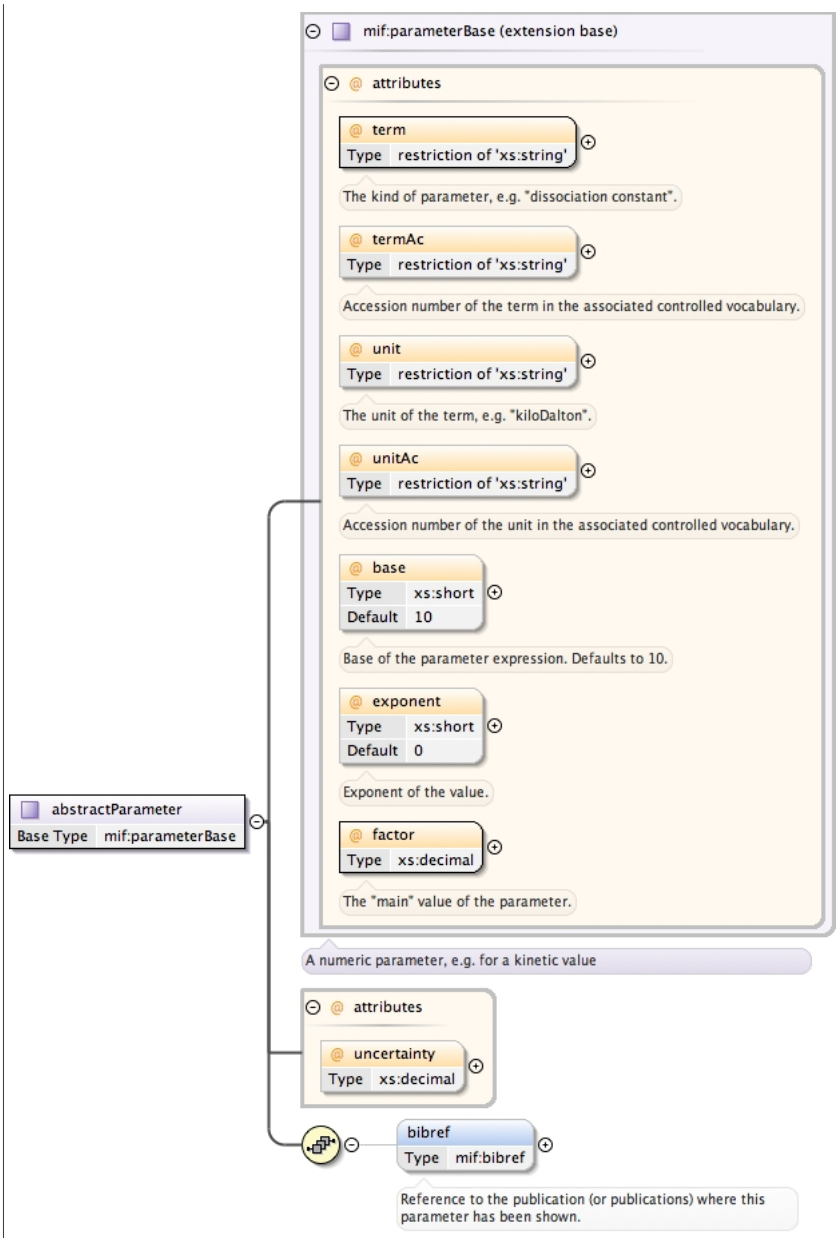
Complex Type `mif:abstractParameterList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Lists parameters which are relevant for the complex/abstract interaction, e.g. kinetics. These parameters can refer to their original publication.
Diagram	
Used by	Element mif:abstractInteraction/mif:parameterList
Model	mif:parameter+
Children	mif:parameter
Source	<xs:complexType name="abstractParameterList"> <xs:annotation> <xs:documentation>Lists parameters which are relevant for the complex/abstract interaction, e.g. kinetics. These parameters can refer to their original publication.</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="parameter" type="mif:abstractParameter" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType>

Complex Type `mif:abstractParameter`

Namespace	http://psi.hupo.org/mi/mif300

Diagram



Type	extension of mif:parameterBase
Type hierarchy	• mif:parameterBase • mif:abstractParameter
Used by	Element mif:abstractParameterList/mif:parameter
Model	mif:bibref{0,1}
Children	mif:bibref

Attributes

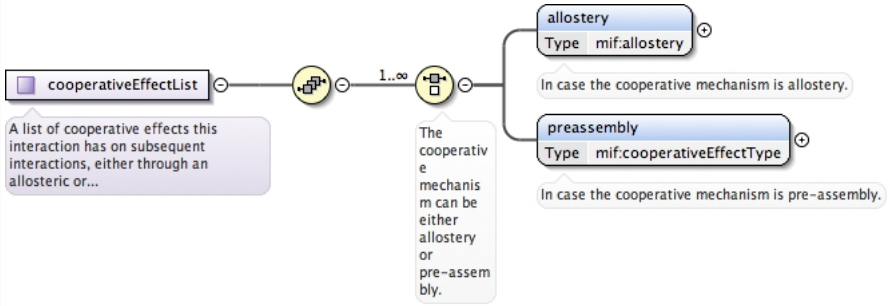
QName	Type	Fixed	Default	Use
base	xs:short		10	optional
	`Base of the parameter expression. Defaults to 10.`			
exponent	xs:short		0	optional
	`Exponent of the value.`			
factor	xs:decimal			required
	`The "main" value of the parameter.`			
term	restriction of xs:string			required
	`The kind of parameter, e.g. "dissociation constant".`			
termAc	restriction of xs:string			optional

	QName	Type	Fixed	Default	Use
		Accession number of the term in the associated controlled vocabulary.			
	uncertainty	xs:decimal			optional
	unit	restriction of xs:string			optional
		The unit of the term, e.g. "kiloDalton".			
	unitAc	restriction of xs:string			optional
		Accession number of the unit in the associated controlled vocabulary.			

Source

```
<xs:complexType name="abstractParameter">
  <xs:complexContent>
    <xs:extension base="mif:parameterBase">
      <xs:sequence>
        <xs:element name="bibref" type="mif:bibref" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Reference to the publication (or publications) where this parameter
 has been shown.</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
      <xs:attribute name="uncertainty" type="xs:decimal" use="optional"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

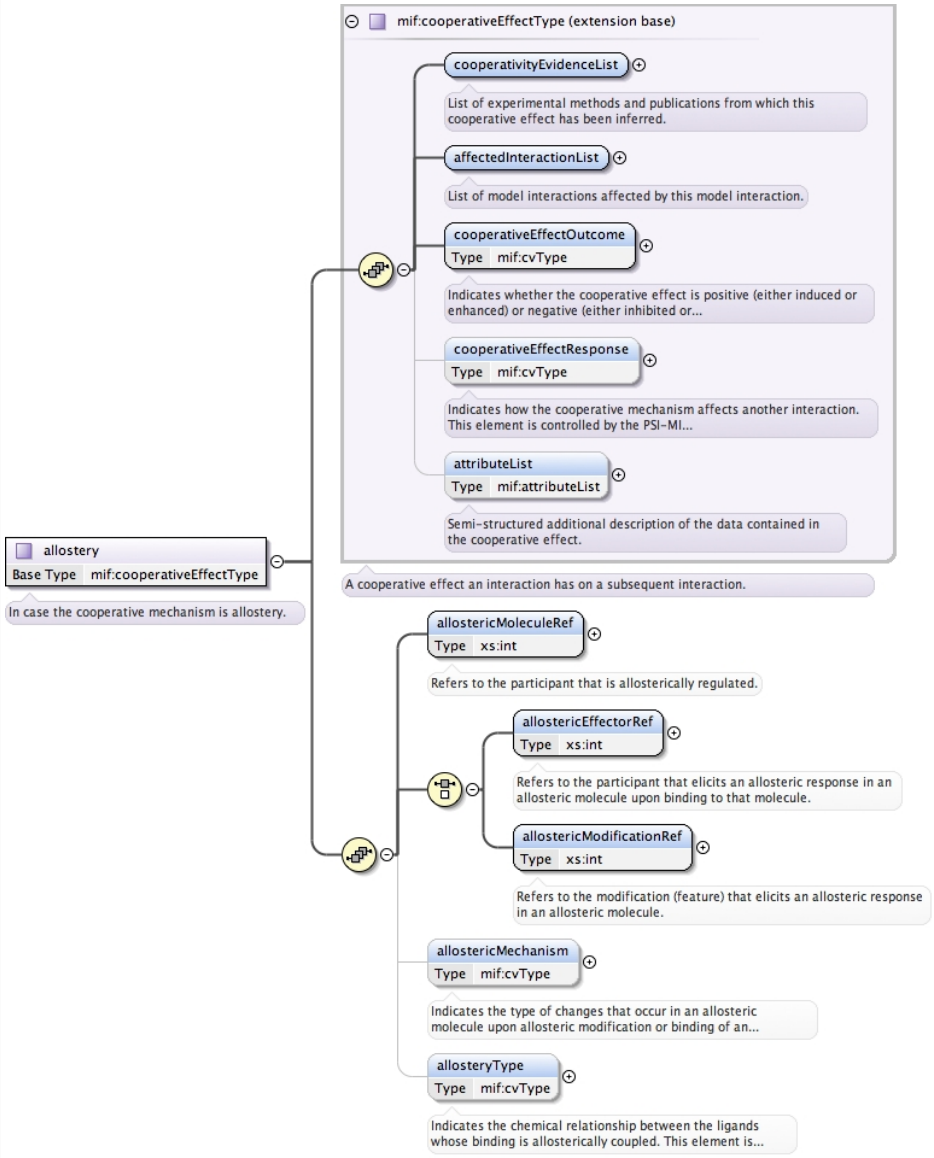
Complex Type `mif:cooperativeEffectList`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A list of cooperative effects this interaction has on subsequent interactions, either through an allosteric or pre-assembly effect.
Diagram	
Used by	Element mif:abstractInteraction/mif:cooperativeEffectList
Model	(mif:allostery | mif:preassembly)
Children	mif:allostery, mif:preassembly

Source

```
<xs:complexType name="cooperativeEffectList">
  <xs:annotation>
    <xs:documentation>A list of cooperative effects this interaction has on subsequent interactions,
 either through an allosteric or pre-assembly effect.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:choice minOccurs="1" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>The cooperative mechanism can be either allostery or pre-assembly.</
xs:documentation>
      </xs:annotation>
      <xs:element name="allostery" type="mif:allostery">
        <xs:annotation>
          <xs:documentation>In case the cooperative mechanism is allostery.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="preassembly" type="mif:cooperativeEffectType">
        <xs:annotation>
          <xs:documentation>In case the cooperative mechanism is pre-assembly.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
  </xs:sequence>
</xs:complexType>
```

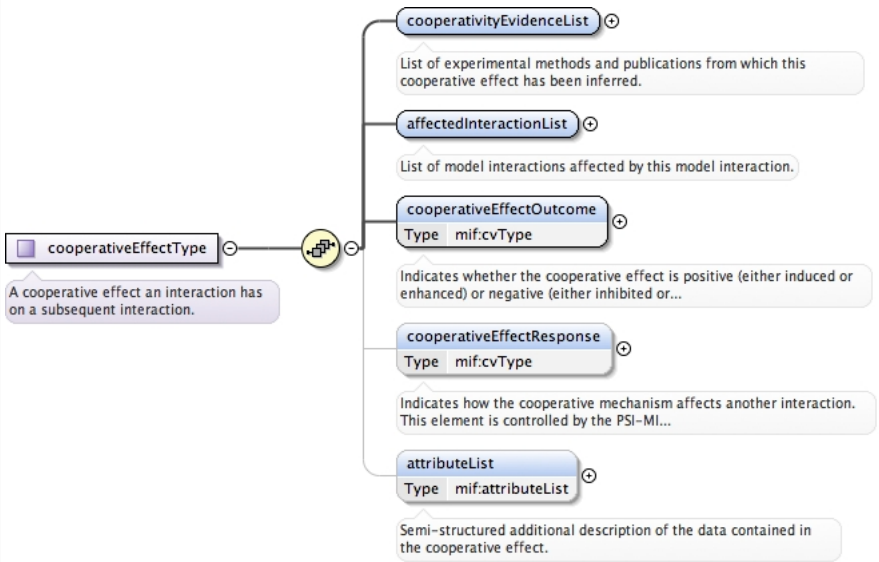
Complex Type `mif:allostery`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	`In case the cooperative mechanism is allostery.`
Diagram	
Type	extension of mif:cooperativeEffectType
Type hierarchy	• mif:cooperativeEffectType • mif:allostery
Used by	Element mif:cooperativeEffectList/mif:allostery
Model	mif:cooperativityEvidenceList , mif:affectedInteractionList , mif:cooperativeEffectOutcome , mif:cooperativeEffectResponse{0,1} , mif:attributeList{0,1} , mif:allostericMoleculeRef , (mif:allostericEffectorRef | mif:allostericModificationRef) , mif:allostericMechanism{0,1} , mif:allosteryType{0,1}
Children	mif:affectedInteractionList, mif:allostericEffectorRef, mif:allostericMechanism, mif:allostericModificationRef, mif:allostericMoleculeRef, mif:allosteryType, mif:attributeList, mif:cooperativeEffectOutcome, mif:cooperativeEffectResponse, mif:cooperativityEvidenceList

Source	<pre><xs:complexType name="allostery">
	  <xs:annotation>
	  <xs:documentation>In case the cooperative mechanism is allostery.</xs:documentation>
	  </xs:annotation>
	  <xs:complexContent>
	  <xs:extension base="mif:cooperativeEffectType">
	  <xs:sequence>
	  <xs:element name="allostericMoleculeRef" type="xs:int" minOccurs="1" maxOccurs="1">
	  <xs:annotation></pre>

```
            <xs:documentation>Refers to the participant that is allosterically regulated.</
xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:choice minOccurs="1">
          <xs:element name="allostericEffectorRef" type="xs:int" minOccurs="1" maxOccurs="1">
            <xs:annotation>
              <xs:documentation>Refers to the participant that elicits an allosteric response in an
 allosteric molecule upon binding to that molecule.</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="allostericModificationRef" type="xs:int" minOccurs="1" maxOccurs="1">
            <xs:annotation>
              <xs:documentation>Refers to the modification (feature) that elicits an allosteric
 response in an allosteric molecule.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:choice>
        <xs:element name="allostericMechanism" type="mif:cvType" minOccurs="0" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>Indicates the type of changes that occur in an allosteric molecule
 upon allosteric modification or binding of an allosteric effector and result in an allosteric
 response. This element is controlled by the PSI-MI controlled vocabulary "allosteric mechanism",
 root term id MI:1164.</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="allosteryType" type="mif:cvType" minOccurs="0" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>Indicates the chemical relationship between the ligands whose
 binding is allosterically coupled. This element is controlled by the PSI-MI controlled vocabulary
 "allostery type", root term id MI:1167.</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

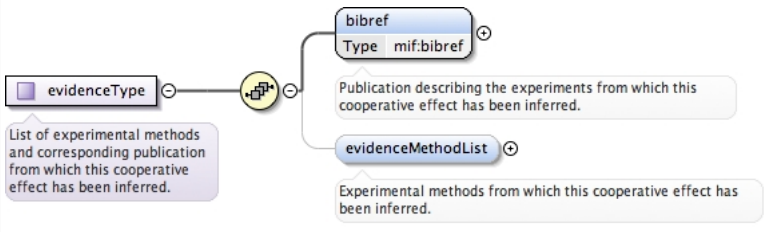
Complex Type `mif:cooperativeEffectType`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A cooperative effect an interaction has on a subsequent interaction.
Diagram	
Used by	Complex Type: mif:allostery Element: mif:cooperativeEffectList/mif:preassembly
Model	mif:cooperativityEvidenceList , mif:affectedInteractionList , mif:cooperativeEffectOutcome , mif:cooperativeEffectResponse{0,1} , mif:attributeList{0,1}
Children	mif:affectedInteractionList, mif:attributeList, mif:cooperativeEffectOutcome, mif:cooperativeEffectResponse, mif:cooperativityEvidenceList

Source	`<xs:complexType name="cooperativeEffectType">`
	`  <xs:annotation>`
	`  <xs:documentation>A cooperative effect an interaction has on a subsequent interaction.</xs:documentation>`

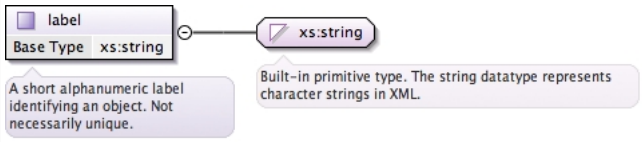
```
  </xs:annotation>
  <xs:sequence>
    <xs:element name="cooperativityEvidenceList">
      <xs:annotation>
        <xs:documentation>List of experimental methods and publications from which this cooperative
 effect has been inferred.</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:sequence>
          <xs:element name="cooperativityEvidenceDescription" type="mif:evidenceType" minOccurs="1"
 maxOccurs="unbounded">
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="affectedInteractionList">
      <xs:annotation>
        <xs:documentation>List of model interactions affected by this model interaction.</
xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:sequence>
          <xs:element name="affectedInteractionRef" type="xs:int" minOccurs="1"
 maxOccurs="unbounded">
            <xs:annotation>
              <xs:documentation>Refers to the model interaction that is affected by the current
 model interaction.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="cooperativeEffectOutcome" type="mif:cvType" minOccurs="1" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>Indicates whether the cooperative effect is positive (either induced or
 enhanced) or negative (either inhibited or abrogated). This element is controlled by the PSI-MI
 controlled vocabulary "cooperative effect outcome" root term, id MI:1153.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="cooperativeEffectResponse" type="mif:cvType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>Indicates how the cooperative mechanism affects another interaction. This
 element is controlled by the PSI-MI controlled vocabulary "cooperative effect response" root term,
 id MI:.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="attributeList" type="mif:attributeList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Semi-structured additional description of the data contained in the
 cooperative effect.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:evidenceType`

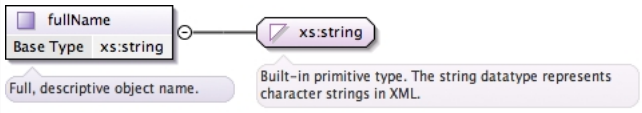
Namespace	http://psi.hupo.org/mi/mif300
Annotations	List of experimental methods and corresponding publication from which this cooperative effect has been inferred.
Diagram	
Used by	Element mif:cooperativeEffectType/mif:cooperativityEvidenceList/mif:cooperativityEvidenceDescription
Model	mif:bibref , mif:evidenceMethodList{0,1}
Children	mif:bibref, mif:evidenceMethodList
Source	<xs:complexType name="evidenceType"> <xs:annotation> <xs:documentation>List of experimental methods and corresponding publication from which this cooperative effect has been inferred.</xs:documentation> </xs:annotation>

```
  <xs:sequence>
    <xs:element name="bibref" type="mif:bibref" minOccurs="1" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>Publication describing the experiments from which this cooperative effect
 has been inferred.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="evidenceMethodList" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Experimental methods from which this cooperative effect has been
 inferred.</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:sequence>
          <xs:element name="evidenceMethod" type="mif:cvType" minOccurs="1" maxOccurs="unbounded"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

Complex Type `mif:label`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	A short alphanumeric label identifying an object. Not necessarily unique.
Diagram	
Type	extension of xs:string
Source	<xs:complexType name="label"> <xs:annotation> <xs:documentation>A short alphanumeric label identifying an object. Not necessarily unique.</xs:documentation> </xs:annotation> <xs:simpleContent> <xs:extension base="xs:string"/> </xs:simpleContent> </xs:complexType>

Complex Type `mif:fullName`

Namespace	http://psi.hupo.org/mi/mif300
Annotations	Full, descriptive object name.
Diagram	
Type	extension of xs:string
Source	<xs:complexType name="fullName"> <xs:annotation> <xs:documentation>Full, descriptive object name.</xs:documentation> </xs:annotation> <xs:simpleContent> <xs:extension base="xs:string"/> </xs:simpleContent> </xs:complexType>

Namespace: ""

Attribute(s)

Attribute `mif:alias / @typeAc`

Namespace	No namespace
Type	restriction of xs:string
Properties	use: optional

Facets	minLength	1
Used by	Complex Type	mif:alias
Source	<xs:attribute name="typeAc" use="optional"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>	

Attribute mif:alias / @type

Namespace	No namespace	
Type	restriction of xs:string	
Properties	use:	optional
Facets	minLength	1
Used by	Complex Type	mif:alias
Source	<xs:attribute name="type" use="optional"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>	

Attribute mif:attribute / @name

Namespace	No namespace	
Annotations	The name of the attribute.	
Type	restriction of xs:string	
Properties	use:	required
Facets	minLength	1
Used by	Complex Type	mif:attribute
Source	<xs:attribute name="name" use="required"> <xs:annotation> <xs:documentation>The name of the attribute.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>	

Attribute mif:attribute / @nameAc

Namespace	No namespace	
Annotations	Enables control of the attribute type through reference to an external controlled vocabulary. Root element in the PSI MI CV is MI:0590.	
Type	restriction of xs:string	
Properties	use:	optional
Facets	minLength	1
Used by	Complex Type	mif:attribute
Source	<xs:attribute name="nameAc" use="optional"> <xs:annotation> <xs:documentation>Enables control of the attribute type through reference to an external controlled vocabulary. Root element in the PSI MI CV is MI:0590.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction>	

```
  </xs:simpleType>
</xs:attribute>
```

Attribute `mif:dbReference / @db`

Namespace	No namespace
Annotations	Name of the external database. Taken from the controlled vocabulary of databases.
Type	restriction of xs:string
Properties	use: required
Facets	minLength 1
Used by	Complex Type mif:dbReference
Source	<xs:attribute name="db" use="required"> <xs:annotation> <xs:documentation>Name of the external database. Taken from the controlled vocabulary of databases.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>

Attribute `mif:dbReference / @dbAc`

Namespace	No namespace
Annotations	Accession number of the database in the database CV. This element is controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.
Type	restriction of xs:string
Properties	use: optional
Facets	minLength 1
Used by	Complex Type mif:dbReference
Source	<xs:attribute name="dbAc" use="optional"> <xs:annotation> <xs:documentation>Accession number of the database in the database CV. This element is controlled by the PSI-MI controlled vocabulary "database citation", root term id MI:0444.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>

Attribute `mif:dbReference / @id`

Namespace	No namespace
Annotations	Primary identifier of the object in the external database, e.g. UniProt accession number.
Type	restriction of xs:string
Properties	use: required
Facets	minLength 1
Used by	Complex Type mif:dbReference
Source	<xs:attribute name="id" use="required"> <xs:annotation> <xs:documentation>Primary identifier of the object in the external database, e.g. UniProt accession number.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType>

```
</xs:attribute>
```

Attribute `mif:dbReference / @secondary`

Namespace	No namespace	
Annotations	`Secondary identifier of the object in the external database, e.g. UniProt ID.`	
Type	restriction of xs:string	
Properties	use:	`optional`
Facets	minLength	`1`
Used by	Complex Type	mif:dbReference
Source		

```
<xs:attribute name="secondary" use="optional">
  <xs:annotation>
    <xs:documentation>Secondary identifier of the object in the external database, e.g. UniProt
 ID.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

Attribute `mif:dbReference / @version`

Namespace	No namespace	
Annotations	`The version number of the object in the external database.`	
Type	restriction of xs:string	
Properties	use:	`optional`
Facets	minLength	`1`
Used by	Complex Type	mif:dbReference
Source		

```
<xs:attribute name="version" use="optional">
  <xs:annotation>
    <xs:documentation>The version number of the object in the external database.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

Attribute `mif:dbReference / @refType`

Namespace	No namespace	
Annotations	`Reference type, e.g. "identity" if this reference referes to an identical object in the external database, or "see-also" for additional information. Controlled by CV.`	
Type	restriction of xs:string	
Properties	use:	`optional`
Facets	minLength	`1`
Used by	Complex Type	mif:dbReference
Source		

```
<xs:attribute name="refType" use="optional">
  <xs:annotation>
    <xs:documentation>Reference type, e.g. "identity" if this reference referes to an identical
 object in the external database, or "see-also" for additional information. Controlled by CV.</
xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

Attribute `mif:dbReference / @refTypeAc`

Namespace	No namespace
Annotations	`Reference type accession number from the CV of reference types. This element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.`
Type	restriction of xs:string
Properties	use: `optional`
Facets	minLength `1`
Used by	Complex Type mif:dbReference
Source	`<xs:attribute name="refTypeAc" use="optional"> <xs:annotation> <xs:documentation>Reference type accession number from the CV of reference types. This element is controlled by the PSI-MI controlled vocabulary "xref type", root term id MI:0353.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>`

Attribute `mif:source / @release`

Namespace	No namespace
Type	restriction of xs:string
Properties	use: `optional`
Facets	minLength `1`
Used by	Complex Type mif:source
Source	`<xs:attribute name="release" use="optional"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>`

Attribute `mif:source / @releaseDate`

Namespace	No namespace
Type	xs:date
Properties	use: `optional`
Used by	Complex Type mif:source
Source	`<xs:attribute name="releaseDate" type="xs:date" use="optional"/>`

Attribute `mif:availability / @id`

Namespace	No namespace
Type	xs:int
Properties	use: `required`
Used by	Complex Type mif:availability
Source	`<xs:attribute name="id" type="xs:int" use="required"/>`

Attribute `mif:bioSource / @ncbiTaxId`

Namespace	No namespace
Type	xs:int
Properties	use: `required`

Used by	Complex Type	mif:bioSource
Source	<xs:attribute name="ncbiTaxId" type="xs:int" use="required"/>	

Attribute `mif:variableValue / @id`

Namespace	No namespace
Annotations	Unique numerical identifier for this variableValue so an interaction can refer to it later. The id has to be unique within a same entry.
Type	xs:int
Properties	use: required
Used by	Complex Type mif:variableValue
Source	<xs:attribute name="id" type="xs:int" use="required"> <xs:annotation> <xs:documentation>Unique numerical identifier for this variableValue so an interaction can refer to it later. The id has to be unique within a same entry.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute `mif:variableValue / @order`

Namespace	No namespace
Annotations	Optional numerical order attribute to give an explicit order for a variableValue in the variableValueList.
Type	xs:int
Properties	use: optional
Used by	Complex Type mif:variableValue
Source	<xs:attribute name="order" type="xs:int" use="optional"> <xs:annotation> <xs:documentation>Optional numerical order attribute to give an explicit order for a variableValue in the variableValueList.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute `mif:experimentDescription / @id`

Namespace	No namespace
Annotations	All major objects have a numerical id which must be unique to that object within an entry. The object may be repeated, though, e.g. in the denormalised representation.
Type	xs:int
Properties	use: required
Used by	Complex Type mif:experimentDescription
Source	<xs:attribute name="id" type="xs:int" use="required"> <xs:annotation> <xs:documentation>All major objects have a numerical id which must be unique to that object within an entry. The object may be repeated, though, e.g. in the denormalised representation.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute `mif:interactor / @id`

Namespace	No namespace
Annotations	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.
Type	xs:int
Properties	use: required
Used by	Complex Type mif:interactor
Source	<xs:attribute name="id" type="xs:int" use="required">

```
  <xs:annotation>
    <xs:documentation>All major objects have a numerical id which is unique to that object within
 a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</
xs:documentation>
  </xs:annotation>
</xs:attribute>
```

Attribute `mif:participantCandidateParent / @id`

Namespace	No namespace	
Type	xs:int	
Properties	use:	`required`
Used by	Complex Type	mif:participantCandidateParent
Source	`<xs:attribute name="id" type="xs:int" use="required"/>`	

Attribute `mif:position / @position`

Namespace	No namespace	
Type	xs:long	
Properties	use:	`required`
Used by	Complex Type	mif:position
Source	`<xs:attribute name="position" type="xs:long" use="required"/>`	

Attribute `mif:interval / @begin`

Namespace	No namespace	
Type	xs:long	
Properties	use:	`required`
Used by	Complex Type	mif:interval
Source	`<xs:attribute name="begin" type="xs:long" use="required"/>`	

Attribute `mif:interval / @end`

Namespace	No namespace	
Type	xs:long	
Properties	use:	`required`
Used by	Complex Type	mif:interval
Source	`<xs:attribute name="end" type="xs:long" use="required"/>`	

Attribute `mif:parameterBase / @term`

Namespace	No namespace	
Annotations	`The kind of parameter, e.g. "dissociation constant".`	
Type	restriction of xs:string	
Properties	use:	`required`
Facets	minLength	`1`
Used by	Complex Type	mif:parameterBase
Source		

```
<xs:attribute name="term" use="required">
  <xs:annotation>
    <xs:documentation>The kind of parameter, e.g. "dissociation constant".</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

Attribute `mif:parameterBase / @termAc`

Namespace	No namespace
Annotations	`Accession number of the term in the associated controlled vocabulary.`
Type	restriction of xs:string
Properties	use: `optional`
Facets	minLength `1`
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="termAc" use="optional"> <xs:annotation> <xs:documentation>Accession number of the term in the associated controlled vocabulary.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>

Attribute `mif:parameterBase / @unit`

Namespace	No namespace
Annotations	`The unit of the term, e.g. "kiloDalton".`
Type	restriction of xs:string
Properties	use: `optional`
Facets	minLength `1`
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="unit" use="optional"> <xs:annotation> <xs:documentation>The unit of the term, e.g. "kiloDalton".</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>

Attribute `mif:parameterBase / @unitAc`

Namespace	No namespace
Annotations	`Accession number of the unit in the associated controlled vocabulary.`
Type	restriction of xs:string
Properties	use: `optional`
Facets	minLength `1`
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="unitAc" use="optional"> <xs:annotation> <xs:documentation>Accession number of the unit in the associated controlled vocabulary.</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:minLength value="1"/> </xs:restriction> </xs:simpleType> </xs:attribute>

Attribute `mif:parameterBase / @base`

Namespace	No namespace

Annotations	Base of the parameter expression. Defaults to 10.
Type	xs:short
Properties	use: optional default: 10
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="base" type="xs:short" use="optional" default="10"> <xs:annotation> <xs:documentation>Base of the parameter expression. Defaults to 10.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:parameterBase / @exponent

Namespace	No namespace
Annotations	Exponent of the value.
Type	xs:short
Properties	use: optional default: 0
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="exponent" type="xs:short" use="optional" default="0"> <xs:annotation> <xs:documentation>Exponent of the value.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:parameterBase / @factor

Namespace	No namespace
Annotations	The "main" value of the parameter.
Type	xs:decimal
Properties	use: required
Used by	Complex Type mif:parameterBase
Source	<xs:attribute name="factor" type="xs:decimal" use="required"> <xs:annotation> <xs:documentation>The "main" value of the parameter.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:parameter / @uncertainty

Namespace	No namespace
Type	xs:decimal
Properties	use: optional
Used by	Complex Type mif:parameter
Source	<xs:attribute name="uncertainty" type="xs:decimal" use="optional"/>

Attribute mif:feature / @id

Namespace	No namespace
Type	xs:int
Properties	use: required
Used by	Complex Type mif:feature
Source	<xs:attribute name="id" type="xs:int" use="required"/>

Attribute mif:stoichiometryType / @value

Namespace	No namespace

Annotations	The participant stoichiometry value
Type	xs:int
Properties	use: required
Used by	Complex Type mif:stoichiometryType
Source	<xs:attribute name="value" type="xs:int" use="required"> <xs:annotation> <xs:documentation>The participant stoichiometry value</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:stoichiometryRangeType / @minValue

Namespace	No namespace
Annotations	The minimum stoichiometry value
Type	xs:int
Properties	use: required
Used by	Complex Type mif:stoichiometryRangeType
Source	<xs:attribute name="minValue" type="xs:int" use="required"> <xs:annotation> <xs:documentation>The minimum stoichiometry value</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:stoichiometryRangeType / @maxValue

Namespace	No namespace
Annotations	The maximum stoichiometry value
Type	xs:int
Properties	use: required
Used by	Complex Type mif:stoichiometryRangeType
Source	<xs:attribute name="maxValue" type="xs:int" use="required"> <xs:annotation> <xs:documentation>The maximum stoichiometry value</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:participant / @id

Namespace	No namespace
Type	xs:int
Properties	use: required
Used by	Complex Type mif:participant
Source	<xs:attribute name="id" type="xs:int" use="required"/>

Attribute mif:interaction / @imexId

Namespace	No namespace
Type	xs:string
Properties	use: optional
Used by	Complex Type mif:interaction
Source	<xs:attribute name="imexId" type="xs:string" use="optional"/>

Attribute mif:interaction / @id

Namespace	No namespace
Annotations	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated,

	though, e.g. in the denormalised representation.
Type	xs:int
Properties	use: required
Used by	Complex Type mif:interaction
Source	<xs:attribute name="id" type="xs:int" use="required"> <xs:annotation> <xs:documentation>All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:abstractFeature / @id

Namespace	No namespace
Type	xs:int
Properties	use: required
Used by	Complex Type mif:abstractFeature
Source	<xs:attribute name="id" type="xs:int" use="required"/>

Attribute mif:abstractParticipant / @id

Namespace	No namespace
Type	xs:int
Properties	use: required
Used by	Complex Type mif:abstractParticipant
Source	<xs:attribute name="id" type="xs:int" use="required"/>

Attribute mif:abstractParameter / @uncertainty

Namespace	No namespace
Type	xs:decimal
Properties	use: optional
Used by	Complex Type mif:abstractParameter
Source	<xs:attribute name="uncertainty" type="xs:decimal" use="optional"/>

Attribute mif:abstractInteraction / @id

Namespace	No namespace
Annotations	All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.
Type	xs:int
Properties	use: required
Used by	Complex Type mif:abstractInteraction
Source	<xs:attribute name="id" type="xs:int" use="required"> <xs:annotation> <xs:documentation>All major objects have a numerical id which is unique to that object within a PSI MI file. The object may be repeated, though, e.g. in the denormalised representation.</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:entrySet / @level

Namespace	No namespace
Annotations	PSI MI level
Type	xs:int

Properties	use:	required
	fixed:	3
Used by	Complex Type	mif:entrySet
Source	<xs:attribute name="level" type="xs:int" use="required" fixed="3"> <xs:annotation> <xs:documentation>PSI MI level</xs:documentation> </xs:annotation> </xs:attribute>	

Attribute mif:entrySet / @version

Namespace	No namespace
Annotations	PSI MI version within given level
Type	xs:int
Properties	use: required fixed: 0
Used by	Complex Type mif:entrySet
Source	<xs:attribute name="version" type="xs:int" use="required" fixed="0"> <xs:annotation> <xs:documentation>PSI MI version within given level</xs:documentation> </xs:annotation> </xs:attribute>

Attribute mif:entrySet / @minorVersion

Namespace	No namespace
Type	xs:int
Properties	use: optional fixed: 0
Used by	Complex Type mif:entrySet
Source	<xs:attribute name="minorVersion" type="xs:int" use="optional" fixed="0"/>