



## LJMU Research Online

**Mocioiu, V, Ortega-Martorell, S, Olier, I, Jablonski, M, Starcukova, J, Lisboa, P, Arús, C and Julià-Sapé, M**

**From raw data to data-analysis for magnetic resonance spectroscopy - the missing link: jMRUI2XML.**

<http://researchonline.ljmu.ac.uk/id/eprint/2322/>

### Article

**Citation** (please note it is advisable to refer to the publisher's version if you intend to cite from this work)

**Mocioiu, V, Ortega-Martorell, S, Olier, I, Jablonski, M, Starcukova, J, Lisboa, P, Arús, C and Julià-Sapé, M (2015) From raw data to data-analysis for magnetic resonance spectroscopy - the missing link: jMRUI2XML. BMC Bioinformatics. 16 (378). pp. 1-11. ISSN 1471-2105**

LJMU has developed [LJMU Research Online](#) for users to access the research output of the University more effectively. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LJMU Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain.

The version presented here may differ from the published version or from the version of the record. Please see the repository URL above for details on accessing the published version and note that access may require a subscription.

For more information please contact [researchonline@ljmu.ac.uk](mailto:researchonline@ljmu.ac.uk)

<http://researchonline.ljmu.ac.uk/>

element **DATASET**

<p>diagram</p>																									
<p>namespace</p>	<p>http://gabrmn.uab.es/jmruixml_sv</p>																								
<p>properties</p>	<p>content complex</p>																								
<p>children</p>	<p><a href="#">sv:Preprocessing</a> <a href="#">sv:Voxel</a> <a href="#">sv:Grid</a></p>																								
<p>attributes</p>	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td><a href="#">CreatedBy</a></td> <td>xs:string</td> <td>required</td> <td></td> <td></td> <td></td> </tr> <tr> <td><a href="#">Date</a></td> <td>xs:date</td> <td>required</td> <td></td> <td></td> <td></td> </tr> <tr> <td><a href="#">Version</a></td> <td>xs:string</td> <td>required</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	<a href="#">CreatedBy</a>	xs:string	required				<a href="#">Date</a>	xs:date	required				<a href="#">Version</a>	xs:string	required			
Name	Type	Use	Default	Fixed	Annotation																				
<a href="#">CreatedBy</a>	xs:string	required																							
<a href="#">Date</a>	xs:date	required																							
<a href="#">Version</a>	xs:string	required																							
<p>annotation</p>	<p>documentation          Root element</p>																								
<p>source</p>	<pre>&lt;xs:element name="DATASET"&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;Root element&lt;/xs:documentation&gt;   &lt;/xs:annotation&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Preprocessing"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence&gt;             &lt;xs:element name="SetRefernce" type="xs:double" minOccurs="0"/&gt;             &lt;xs:element name="Apodization" minOccurs="0"&gt;               &lt;xs:complexType&gt;                 &lt;xs:choice&gt;                   &lt;xs:element name="Lorentzian"&gt;                     &lt;xs:complexType&gt;                       &lt;xs:sequence&gt;</pre>																								

```

        <xs:element name="Hz" type="xs:integer"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Gaussian">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Hz" type="xs:integer"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
<xs:element name="WaterFiltering" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="NumberOfLorentzians" type="xs:integer"/>
            <xs:sequence maxOccurs="3">
                <xs:element name="MinPPM" type="xs:double"/>
                <xs:element name="MaxPPM" type="xs:double"/>
            </xs:sequence>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="BaselineCorrection" minOccurs="0">
    <xs:complexType>
        <xs:sequence maxOccurs="3">
            <xs:element name="MinPPM" type="xs:double"/>
            <xs:element name="MaxPPM" type="xs:double"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="NumberOfPoints" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="NrPoints" type="xs:integer"/>
            <xs:element name="MinPPM" type="xs:double"/>
            <xs:element name="MaxPPM" type="xs:double"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="SetToUnitLength" type="xs:boolean" minOccurs="0"/>
<xs:element name="AlignmentCorrection" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="isBrainH" type="xs:boolean"/>
            <xs:element name="minSNR" type="xs:double"/>
            <xs:element name="minSTD" type="xs:double"/>
            <xs:element name="maxSTD" type="xs:double"/>
            <xs:element name="firstPeak" type="xs:double"/>
            <xs:element name="secondPeak" type="xs:double" minOccurs="0"/>
            <xs:element name="thirdPeak" type="xs:double" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>

```

```

</xs:complexType>
</xs:element>
<xs:element name="AdditionalInformation">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Name" type="xs:string"/>
      <xs:element name="Place" type="xs:string"/>
      <xs:element name="Keywords" type="xs:string" minOccurs="0"/>
      <xs:element name="Observations" type="xs:string" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:choice>
  <xs:element name="Voxel">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Tissue">
          <xs:complexType>
            <xs:attribute name="Type" type="xs:string"/>
          </xs:complexType>
        </xs:element>
        <xs:element name="Spectrum"/>
      </xs:sequence>
      <xs:attribute name="FirstPPM" type="xs:double" use="required"/>
      <xs:attribute name="LastPPM" type="xs:double" use="required"/>
      <xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/>
      <xs:attribute name="SNR" type="xs:double"/>
    </xs:complexType>
  </xs:element>
  <xs:element name="Grid">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Voxel" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="Tissue">
                <xs:complexType>
                  <xs:attribute name="Type" type="xs:string"/>
                </xs:complexType>
              </xs:element>
              <xs:element name="Spectrum"/>
            </xs:sequence>
            <xs:attribute name="FirstPPM" type="xs:double" use="required"/>
            <xs:attribute name="LastPPM" type="xs:double" use="required"/>
            <xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/>
            <xs:attribute name="Xaxis" type="xs:integer" use="required"/>
            <xs:attribute name="Yaxis" type="xs:integer" use="required"/>
            <xs:attribute name="Zaxis" type="xs:integer" use="required"/>
            <xs:attribute name="SNR" type="xs:double"/>
          </xs:complexType>
        </xs:element>

```

	<pre> &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:choice&gt; &lt;/xs:sequence&gt; &lt;xs:attribute name="CreatedBy" type="xs:string" use="required"/&gt; &lt;xs:attribute name="Date" type="xs:date" use="required"/&gt; &lt;xs:attribute name="Version" type="xs:string" use="required"/&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>
--	---

**attribute DATASET/@CreatedBy**

type	<b>xs:string</b>
properties	use required
source	<code>&lt;xs:attribute name="CreatedBy" type="xs:string" use="required"/&gt;</code>

**attribute DATASET/@Date**

type	<b>xs:date</b>
properties	use required
source	<code>&lt;xs:attribute name="Date" type="xs:date" use="required"/&gt;</code>

**attribute DATASET/@Version**

type	<b>xs:string</b>
properties	use required
source	<code>&lt;xs:attribute name="Version" type="xs:string" use="required"/&gt;</code>

element DATASET/Preprocessing

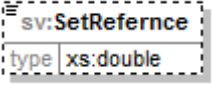
<p>diagram</p>	
<p>namespace</p>	<p>http://gabrmn.uab.es/jmruixml_sv</p>
<p>properties</p>	<p>content complex</p>
<p>children</p>	<p><a href="#">sv:SetReference</a> <a href="#">sv:Apodization</a> <a href="#">sv:WaterFiltering</a> <a href="#">sv:BaselineCorrection</a> <a href="#">sv:NumberOfPoints</a> <a href="#">sv:SetToUnitLength</a> <a href="#">sv:AlignmentCorrection</a> <a href="#">sv:AdditionalInformation</a></p>
<p>source</p>	<pre> &lt;xs:element name="Preprocessing"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="SetReference" type="xs:double" minOccurs="0"/&gt;       &lt;xs:element name="Apodization" minOccurs="0"&gt;         &lt;xs:complexType&gt;           &lt;xs:choice&gt;             &lt;xs:element name="Lorentzian"&gt;               &lt;xs:complexType&gt;                 &lt;xs:sequence&gt;                   &lt;xs:element name="Hz" type="xs:integer"/&gt;                 &lt;/xs:sequence&gt;               &lt;/xs:complexType&gt;             &lt;/xs:element&gt;             &lt;xs:element name="Gaussian"&gt;               &lt;xs:complexType&gt;                 &lt;xs:sequence&gt;                   &lt;xs:element name="Hz" type="xs:integer"/&gt;                 &lt;/xs:sequence&gt;               &lt;/xs:complexType&gt;             &lt;/xs:element&gt;           &lt;/xs:choice&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;       &lt;xs:element name="WaterFiltering" minOccurs="0"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence&gt;             &lt;xs:element name="NumberOfLorentzians" type="xs:integer"/&gt;           &lt;/xs:sequence&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>

```

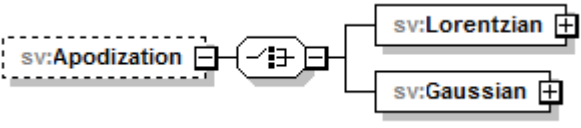
    <xs:sequence maxOccurs="3">
      <xs:element name="MinPPM" type="xs:double"/>
      <xs:element name="MaxPPM" type="xs:double"/>
    </xs:sequence>
  </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="BaselineCorrection" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="3">
      <xs:element name="MinPPM" type="xs:double"/>
      <xs:element name="MaxPPM" type="xs:double"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="NumberOfPoints" minOccurs="0">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="NrPoints" type="xs:integer"/>
      <xs:element name="MinPPM" type="xs:double"/>
      <xs:element name="MaxPPM" type="xs:double"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="SetToUnitLength" type="xs:boolean" minOccurs="0"/>
<xs:element name="AlignmentCorrection" minOccurs="0">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="isBrainH" type="xs:boolean"/>
      <xs:element name="minSNR" type="xs:double"/>
      <xs:element name="minSTD" type="xs:double"/>
      <xs:element name="maxSTD" type="xs:double"/>
      <xs:element name="firstPeak" type="xs:double"/>
      <xs:element name="secondPeak" type="xs:double" minOccurs="0"/>
      <xs:element name="thirdPeak" type="xs:double" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="AdditionalInformation">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Name" type="xs:string"/>
      <xs:element name="Place" type="xs:string"/>
      <xs:element name="Keywords" type="xs:string" minOccurs="0"/>
      <xs:element name="Observations" type="xs:string" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>

```

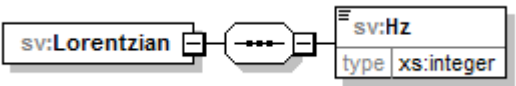
element DATASET/Preprocessing/SetRefernce

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	xs:double
properties	minOcc 0 maxOcc 1 content simple
source	<xs:element name="SetRefernce" type="xs:double" minOccurs="0"/>

element DATASET/Preprocessing/Apodization

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
properties	minOcc 0 maxOcc 1 content complex
children	<a href="#">sv:Lorentzian</a> <a href="#">sv:Gaussian</a>
source	<pre> &lt;xs:element name="Apodization" minOccurs="0"&gt;   &lt;xs:complexType&gt;     &lt;xs:choice&gt;       &lt;xs:element name="Lorentzian"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence&gt;             &lt;xs:element name="Hz" type="xs:integer"/&gt;           &lt;/xs:sequence&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;       &lt;xs:element name="Gaussian"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence&gt;             &lt;xs:element name="Hz" type="xs:integer"/&gt;           &lt;/xs:sequence&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;     &lt;/xs:choice&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>

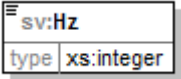
element DATASET/Preprocessing/Apodization/Lorentzian

diagram	
---------	---

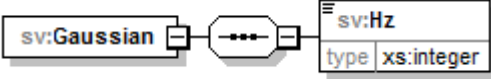


namespace	http://gabrmn.uab.es/jmrui2xml_sv
properties	content complex
children	<a href="#">sv:Hz</a>
source	<pre>&lt;xs:element name="Lorentzian"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Hz" type="xs:integer"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>

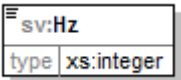
#### element DATASET/Preprocessing/Apodization/Lorentzian/Hz

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:integer</b>
properties	content simple
source	<pre>&lt;xs:element name="Hz" type="xs:integer"/&gt;</pre>

#### element DATASET/Preprocessing/Apodization/Gaussian

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
properties	content complex
children	<a href="#">sv:Hz</a>
source	<pre>&lt;xs:element name="Gaussian"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Hz" type="xs:integer"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>

#### element DATASET/Preprocessing/Apodization/Gaussian/Hz

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv

type	<b>xs:integer</b>
properties	content simple
source	<code>&lt;xs:element name="Hz" type="xs:integer"/&gt;</code>


**element DATASET/Preprocessing/WaterFiltering**

diagram	
namespace	http://gabrmn.uab.es/jmruixml_sv
properties	minOcc 0 maxOcc 1 content complex
children	<a href="#">sv:NumberOfLorentzians</a> <a href="#">sv:MinPPM</a> <a href="#">sv:MaxPPM</a>
source	<pre> &lt;xs:element name="WaterFiltering" minOccurs="0"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="NumberOfLorentzians" type="xs:integer"/&gt;       &lt;xs:sequence maxOccurs="3"&gt;         &lt;xs:element name="MinPPM" type="xs:double"/&gt;         &lt;xs:element name="MaxPPM" type="xs:double"/&gt;       &lt;/xs:sequence&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>

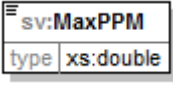
**element DATASET/Preprocessing/WaterFiltering/NumberOfLorentzians**

diagram	
namespace	http://gabrmn.uab.es/jmruixml_sv
type	<b>xs:integer</b>
properties	content simple
source	<code>&lt;xs:element name="NumberOfLorentzians" type="xs:integer"/&gt;</code>

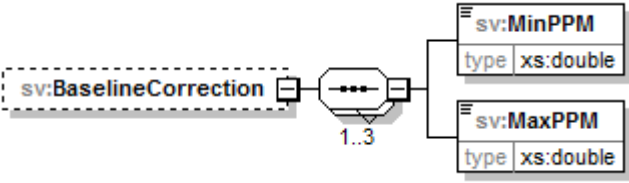
element DATASET/Preprocessing/WaterFiltering/MinPPM

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MinPPM" type="xs:double"/&gt;</code>


element DATASET/Preprocessing/WaterFiltering/MaxPPM

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MaxPPM" type="xs:double"/&gt;</code>


element DATASET/Preprocessing/BaselineCorrection

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
properties	minOcc 0 maxOcc 1 content complex
children	<a href="#">sv:MinPPM</a> <a href="#">sv:MaxPPM</a>
source	<code>&lt;xs:element name="BaselineCorrection" minOccurs="0"&gt; &lt;xs:complexType&gt;   &lt;xs:sequence maxOccurs="3"&gt;     &lt;xs:element name="MinPPM" type="xs:double"/&gt;     &lt;xs:element name="MaxPPM" type="xs:double"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt;</code>

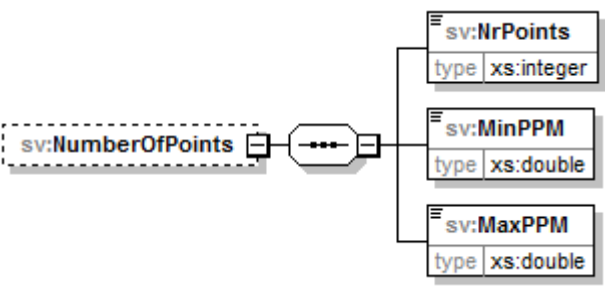
element DATASET/Preprocessing/BaselineCorrection/MinPPM

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MinPPM" type="xs:double"/&gt;</code>


element DATASET/Preprocessing/BaselineCorrection/MaxPPM

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MaxPPM" type="xs:double"/&gt;</code>

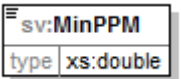
element DATASET/Preprocessing/NumberOfPoints

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
properties	minOcc 0 maxOcc 1 content complex
children	<a href="#">sv:NrPoints</a> <a href="#">sv:MinPPM</a> <a href="#">sv:MaxPPM</a>
source	<pre>&lt;xs:element name="NumberOfPoints" minOccurs="0"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="NrPoints" type="xs:integer"/&gt;       &lt;xs:element name="MinPPM" type="xs:double"/&gt;       &lt;xs:element name="MaxPPM" type="xs:double"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>

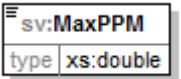
element DATASET/Preprocessing/NumberOfPoints/NrPoints

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:integer</b>
properties	content simple
source	<code>&lt;xs:element name="NrPoints" type="xs:integer"/&gt;</code>

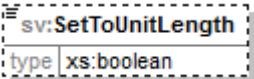
element DATASET/Preprocessing/NumberOfPoints/MinPPM

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MinPPM" type="xs:double"/&gt;</code>

element DATASET/Preprocessing/NumberOfPoints/MaxPPM

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="MaxPPM" type="xs:double"/&gt;</code>

element DATASET/Preprocessing/SetToUnitLength

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:boolean</b>
properties	minOcc 0 maxOcc 1 content simple
source	<code>&lt;xs:element name="SetToUnitLength" type="xs:boolean" minOccurs="0"/&gt;</code>

element DATASET/Preprocessing/AlignmentCorrection

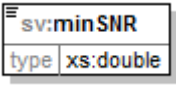
diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
properties	minOcc 0 maxOcc 1 content complex
children	<a href="#">sv:isBrainH</a> <a href="#">sv:minSNR</a> <a href="#">sv:minSTD</a> <a href="#">sv:maxSTD</a> <a href="#">sv:firstPeak</a> <a href="#">sv:secondPeak</a> <a href="#">sv:thirdPeak</a>
source	<pre> &lt;xs:element name="AlignmentCorrection" minOccurs="0"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="isBrainH" type="xs:boolean"/&gt;       &lt;xs:element name="minSNR" type="xs:double"/&gt;       &lt;xs:element name="minSTD" type="xs:double"/&gt;       &lt;xs:element name="maxSTD" type="xs:double"/&gt;       &lt;xs:element name="firstPeak" type="xs:double"/&gt;       &lt;xs:element name="secondPeak" type="xs:double" minOccurs="0"/&gt;       &lt;xs:element name="thirdPeak" type="xs:double" minOccurs="0"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>

element DATASET/Preprocessing/AlignmentCorrection/isBrainH


diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv

type	<b>xs:boolean</b>
properties	content simple
source	<code>&lt;xs:element name="isBrainH" type="xs:boolean"/&gt;</code>

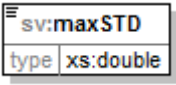
#### element DATASET/Preprocessing/AlignmentCorrection/minSNR

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="minSNR" type="xs:double"/&gt;</code>

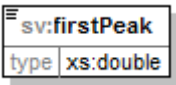
#### element DATASET/Preprocessing/AlignmentCorrection/minSTD

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="minSTD" type="xs:double"/&gt;</code>

#### element DATASET/Preprocessing/AlignmentCorrection/maxSTD

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="maxSTD" type="xs:double"/&gt;</code>

#### element DATASET/Preprocessing/AlignmentCorrection/firstPeak

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv

type	<b>xs:double</b>
properties	content simple
source	<code>&lt;xs:element name="firstPeak" type="xs:double"/&gt;</code>

**element DATASET/Preprocessing/AlignmentCorrection/secondPeak**

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:double</b>
properties	minOcc 0 maxOcc 1 content simple
source	<code>&lt;xs:element name="secondPeak" type="xs:double" minOccurs="0"/&gt;</code>

**element DATASET/Preprocessing/AlignmentCorrection/thirdPeak**

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
type	<b>xs:double</b>
properties	minOcc 0 maxOcc 1 content simple
source	<code>&lt;xs:element name="thirdPeak" type="xs:double" minOccurs="0"/&gt;</code>

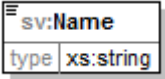
**element DATASET/Preprocessing/AdditionalInformation**

diagram	
namespace	http://gabrmn.uab.es/jmrui2xml_sv
properties	content complex




children	<a href="#">sv&gt;Name</a> <a href="#">sv:Place</a> <a href="#">sv:Keywords</a> <a href="#">sv:Observations</a>
source	<pre>&lt;xs:element name="AdditionalInformation"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Name" type="xs:string"/&gt;       &lt;xs:element name="Place" type="xs:string"/&gt;       &lt;xs:element name="Keywords" type="xs:string" minOccurs="0"/&gt;       &lt;xs:element name="Observations" type="xs:string" minOccurs="0"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>

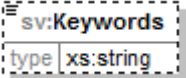
#### element DATASET/Preprocessing/AdditionalInformation/Name

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:string</b>
properties	content simple
source	<pre>&lt;xs:element name="Name" type="xs:string"/&gt;</pre>

#### element DATASET/Preprocessing/AdditionalInformation/Place

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:string</b>
properties	content simple
source	<pre>&lt;xs:element name="Place" type="xs:string"/&gt;</pre>

#### element DATASET/Preprocessing/AdditionalInformation/Keywords

diagram	
namespace	http://gabrmn.uab.es/jmruui2xml_sv
type	<b>xs:string</b>
properties	minOcc 0 maxOcc 1 content simple
source	<pre>&lt;xs:element name="Keywords" type="xs:string" minOccurs="0"/&gt;</pre>

element DATASET/Preprocessing/AdditionalInformation/Observations

diagram	
namespace	http://gabrmn.uab.es/jmruixml_sv
type	<b>xs:string</b>
properties	minOcc 0 maxOcc 1 content simple
source	<code>&lt;xs:element name="Observations" type="xs:string" minOccurs="0"/&gt;</code>

element DATASET/Voxel

diagram						
namespace	http://gabrmn.uab.es/jmruixml_sv					
properties	content complex					
children	<a href="#">sv:Tissue</a> <a href="#">sv:Spectrum</a>					
attributes	Name	Type	Use	Default	Fixed	Annotation
	<a href="#">FirstPPM</a>	<b>xs:double</b>	required			
	<a href="#">LastPPM</a>	<b>xs:double</b>	required			
	<a href="#">NumberOfPoints</a>	<b>xs:integer</b>	required			
	<a href="#">SNR</a>	<b>xs:double</b>				
source	<pre> &lt;xs:element name="Voxel"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Tissue"&gt; </pre>					

	<pre> &lt;xs:complexType&gt;   &lt;xs:attribute name="Type" type="xs:string"/&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;xs:element name="Spectrum"/&gt; &lt;/xs:sequence&gt; &lt;xs:attribute name="FirstPPM" type="xs:double" use="required"/&gt; &lt;xs:attribute name="LastPPM" type="xs:double" use="required"/&gt; &lt;xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/&gt; &lt;xs:attribute name="SNR" type="xs:double"/&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>
--	---

attribute DATASET/Voxel/@FirstPPM

type	xs:double
properties	use required
source	<xs:attribute name="FirstPPM" type="xs:double" use="required"/>

attribute DATASET/Voxel/@LastPPM

type	xs:double
properties	use required
source	<xs:attribute name="LastPPM" type="xs:double" use="required"/>

attribute DATASET/Voxel/@NumberOfPoints

type	xs:integer
properties	use required
source	<xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/>

attribute DATASET/Voxel/@SNR

type	xs:double
source	<xs:attribute name="SNR" type="xs:double"/>

element DATASET/Voxel/Tissue

diagram	<pre> classDiagram     class svTissue["sv:Tissue"]     class attributes     class Type     svTissue -- attributes     attributes -- Type     Type -- xsString["type xs:string"] </pre>
namespace	http://gabrmn.uab.es/jmrui2xml_sv

properties	content complex												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td><a href="#">Type</a></td> <td>xs:string</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	<a href="#">Type</a>	xs:string				
Name	Type	Use	Default	Fixed	Annotation								
<a href="#">Type</a>	xs:string												
source	<pre>&lt;xs:element name="Tissue"&gt;   &lt;xs:complexType&gt;     &lt;xs:attribute name="Type" type="xs:string"/&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>												

#### attribute DATASET/Voxel/Tissue/@Type

type	xs:string
source	<pre>&lt;xs:attribute name="Type" type="xs:string"/&gt;</pre>

#### element DATASET/Voxel/Spectrum

diagram	
namespace	http://gabrmn.uab.es/jmruixml_sv
source	<pre>&lt;xs:element name="Spectrum"/&gt;</pre>

#### element DATASET/Grid

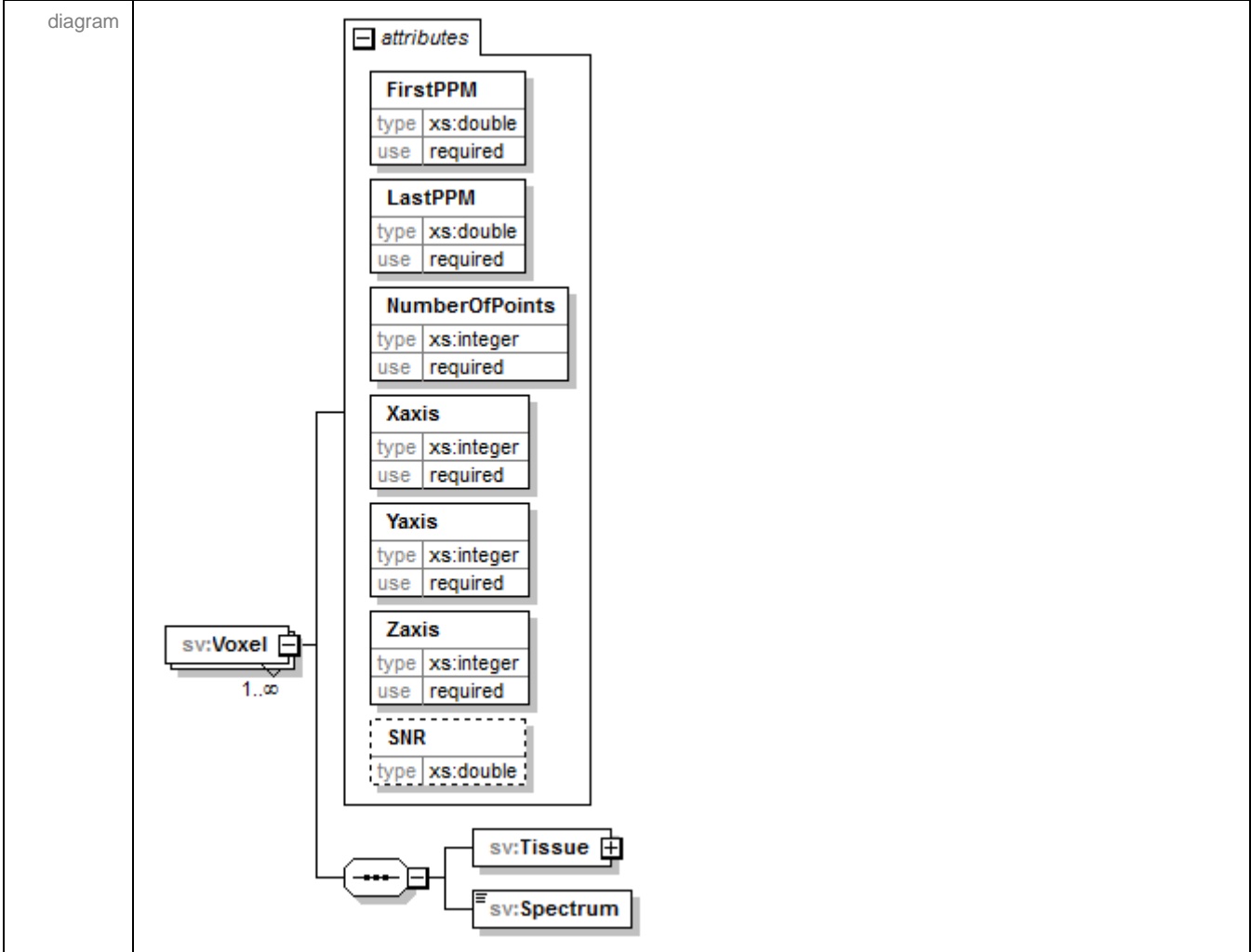
diagram	
namespace	http://gabrmn.uab.es/jmruixml_sv
properties	content complex
children	<a href="#">sv:Voxel</a>
source	<pre>&lt;xs:element name="Grid"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Voxel" maxOccurs="unbounded"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence&gt;             &lt;xs:element name="Tissue"&gt;               &lt;xs:complexType&gt;                 &lt;xs:attribute name="Type" type="xs:string"/&gt;               &lt;/xs:complexType&gt;             &lt;/xs:element&gt;             &lt;xs:element name="Spectrum"/&gt;           &lt;/xs:sequence&gt;           &lt;xs:attribute name="FirstPPM" type="xs:double" use="required"/&gt;           &lt;xs:attribute name="LastPPM" type="xs:double" use="required"/&gt;           &lt;xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/&gt;           &lt;xs:attribute name="Xaxis" type="xs:integer" use="required"/&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt;</pre>

```

<xs:attribute name="Yaxis" type="xs:integer" use="required"/>
<xs:attribute name="Zaxis" type="xs:integer" use="required"/>
<xs:attribute name="SNR" type="xs:double"/>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>

```

element DATASET/Grid/Voxel



namespace	http://gabrmn.uab.es/jmru2xml_sv					
properties	minOcc	1	maxOcc	unbounded	content	complex
children	<a href="#">sv:Tissue</a> <a href="#">sv:Spectrum</a>					
attributes	Name	Type	Use	Default	Fixed	Annotation
	<a href="#">FirstPPM</a>	xs:double	required			
	<a href="#">LastPPM</a>	xs:double	required			

	<a href="#">NumberOfPoints</a> <b>xs:integer</b> required <a href="#">Xaxis</a> <b>xs:integer</b> required <a href="#">Yaxis</a> <b>xs:integer</b> required <a href="#">Zaxis</a> <b>xs:integer</b> required <a href="#">SNR</a> <b>xs:double</b>
source	<pre> &lt;xs:element name="Voxel" maxOccurs="unbounded"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="Tissue"&gt;         &lt;xs:complexType&gt;           &lt;xs:attribute name="Type" type="xs:string"/&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;       &lt;xs:element name="Spectrum"/&gt;     &lt;/xs:sequence&gt;     &lt;xs:attribute name="FirstPPM" type="xs:double" use="required"/&gt;     &lt;xs:attribute name="LastPPM" type="xs:double" use="required"/&gt;     &lt;xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/&gt;     &lt;xs:attribute name="Xaxis" type="xs:integer" use="required"/&gt;     &lt;xs:attribute name="Yaxis" type="xs:integer" use="required"/&gt;     &lt;xs:attribute name="Zaxis" type="xs:integer" use="required"/&gt;     &lt;xs:attribute name="SNR" type="xs:double"/&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>

**attribute DATASET/Grid/Voxel/@FirstPPM**

type	<b>xs:double</b>
properties	use required
source	<pre>&lt;xs:attribute name="FirstPPM" type="xs:double" use="required"/&gt;</pre>

**attribute DATASET/Grid/Voxel/@LastPPM**

type	<b>xs:double</b>
properties	use required
source	<pre>&lt;xs:attribute name="LastPPM" type="xs:double" use="required"/&gt;</pre>

**attribute DATASET/Grid/Voxel/@NumberOfPoints**

type	<b>xs:integer</b>
properties	use required
source	<pre>&lt;xs:attribute name="NumberOfPoints" type="xs:integer" use="required"/&gt;</pre>

attribute DATASET/Grid/Voxel/@Xaxis

type	<b>xs:integer</b>
properties	use required
source	<code>&lt;xs:attribute name="Xaxis" type="xs:integer" use="required"/&gt;</code>

attribute DATASET/Grid/Voxel/@Yaxis

type	<b>xs:integer</b>
properties	use required
source	<code>&lt;xs:attribute name="Yaxis" type="xs:integer" use="required"/&gt;</code>

attribute DATASET/Grid/Voxel/@Zaxis

type	<b>xs:integer</b>
properties	use required
source	<code>&lt;xs:attribute name="Zaxis" type="xs:integer" use="required"/&gt;</code>

attribute DATASET/Grid/Voxel/@SNR

type	<b>xs:double</b>
source	<code>&lt;xs:attribute name="SNR" type="xs:double"/&gt;</code>

element DATASET/Grid/Voxel/Tissue

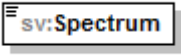
diagram													
namespace	http://gabrmn.uab.es/jmru2xml_sv												
properties	content complex												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td><a href="#">Type</a></td> <td><b>xs:string</b></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	<a href="#">Type</a>	<b>xs:string</b>				
Name	Type	Use	Default	Fixed	Annotation								
<a href="#">Type</a>	<b>xs:string</b>												
source	<pre> &lt;xs:element name="Tissue"&gt;   &lt;xs:complexType&gt;     &lt;xs:attribute name="Type" type="xs:string"/&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; </pre>												

attribute DATASET/Grid/Voxel/Tissue/@Type

type	<b>xs:string</b>
------	------------------

source	<code>&lt;xs:attribute name="Type" type="xs:string"/&gt;</code>
--------	---

element **DATASET/Grid/Voxel/Spectrum**

diagram	
namespace	<code>http://gabrmn.uab.es/jmrui2xml_sv</code>
source	<code>&lt;xs:element name="Spectrum"/&gt;</code>