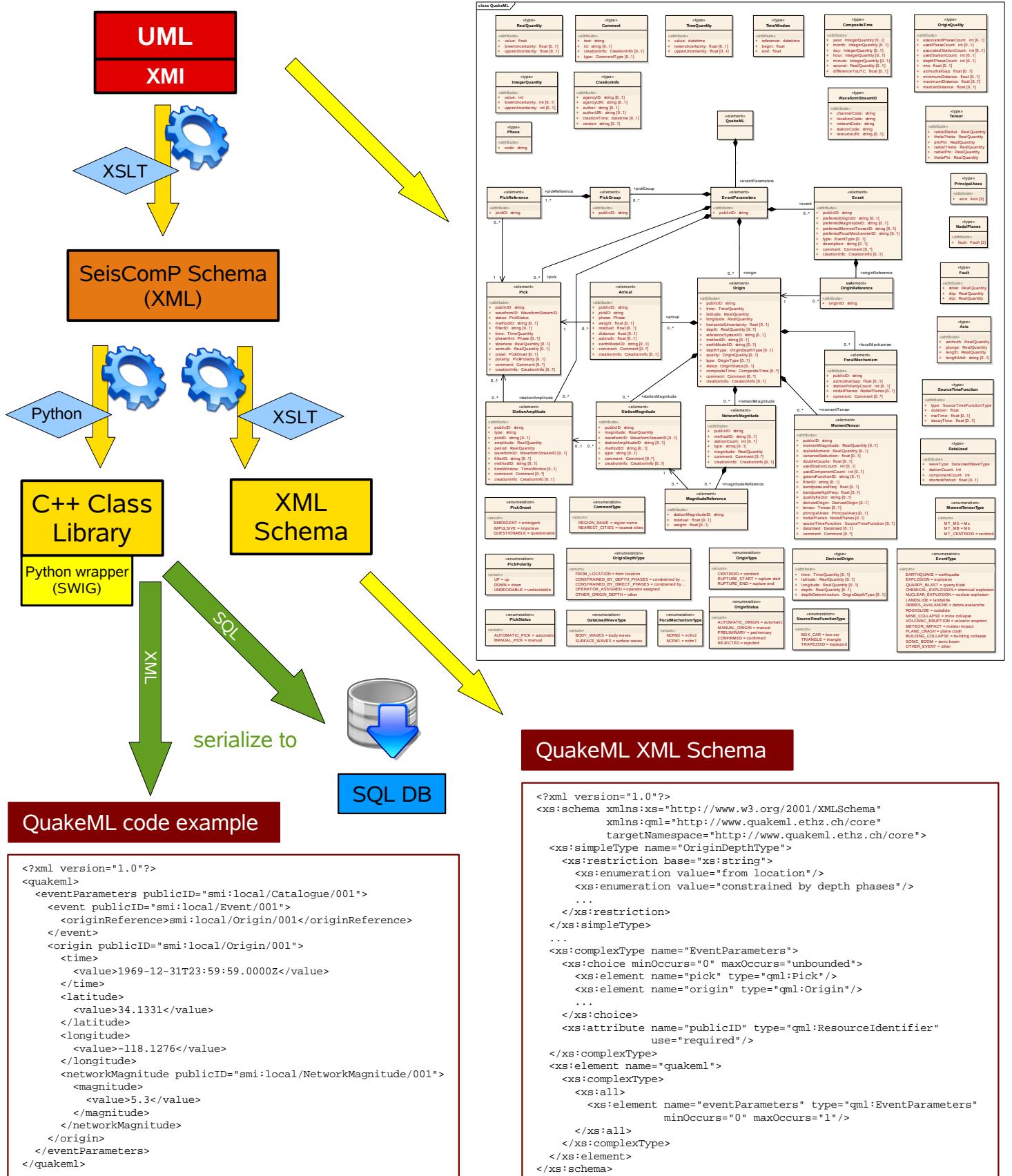# QuakeML – From Data Model to XML representation

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UML / **XMI**

XSLT

SeisComP Schema (XML)

Python — XSLT

C++ Class Library / Python wrapper (SWIG)

XML Schema

XML — SQL — serialize to — **SQL DB**

QuakeML code example

```xml
<?xml version="1.0"?>
<quakeml>
  <eventParameters publicID="smi:local/Catalogue/001">
    <event publicID="smi:local/Event/001">
      <originReference>smi:local/Origin/001</originReference>
    </event>
    <origin publicID="smi:local/Origin/001">
      <time>
        <value>1969-12-31T23:59:59.0000Z</value>
      </time>
      <latitude>
        <value>34.1331</value>
      </latitude>
      <longitude>
        <value>-118.1276</value>
      </longitude>
      <networkMagnitude publicID="smi:local/NetworkMagnitude/001">
        <magnitude>
          <value>5.3</value>
        </magnitude>
      </networkMagnitude>
    </origin>
  </eventParameters>
</quakeml>
```

QuakeML XML Schema

```xml
<?xml version="1.0"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
           xmlns:qml="http://www.quakeml.ethz.ch/core"
           targetNamespace="http://www.quakeml.ethz.ch/core">
  <xs:simpleType name="OriginDepthType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="from location"/>
      <xs:enumeration value="constrained by depth phases"/>
      ...
    </xs:restriction>
  </xs:simpleType>
  ...
  <xs:complexType name="EventParameters">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element name="pick" type="qml:Pick"/>
      <xs:element name="origin" type="qml:Origin"/>
      ...
    </xs:choice>
    <xs:attribute name="publicID" type="qml:ResourceIdentifier"
                  use="required"/>
  </xs:complexType>
  <xs:element name="quakeml">
    <xs:complexType>
      <xs:all>
        <xs:element name="eventParameters" type="qml:EventParameters"
                    minOccurs="0" maxOccurs="1"/>
      </xs:all>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

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