Waypoint Information Exchange XML Schema Specification

Specification

Public for VTS&Coastal Surveillance and Allied Services – Releasable for InterNet Transmission

Content:	Waypoint Information Exchange XML Schema Specification
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Creation Date:	7.9.2009
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Date of review:	7.9.2009
Approved by:	Mats Koivisto
Date of Approval:	7.9.2009
Changes:	

Schema **vessel-waypoint-exchange-7-9-2009.xsd**

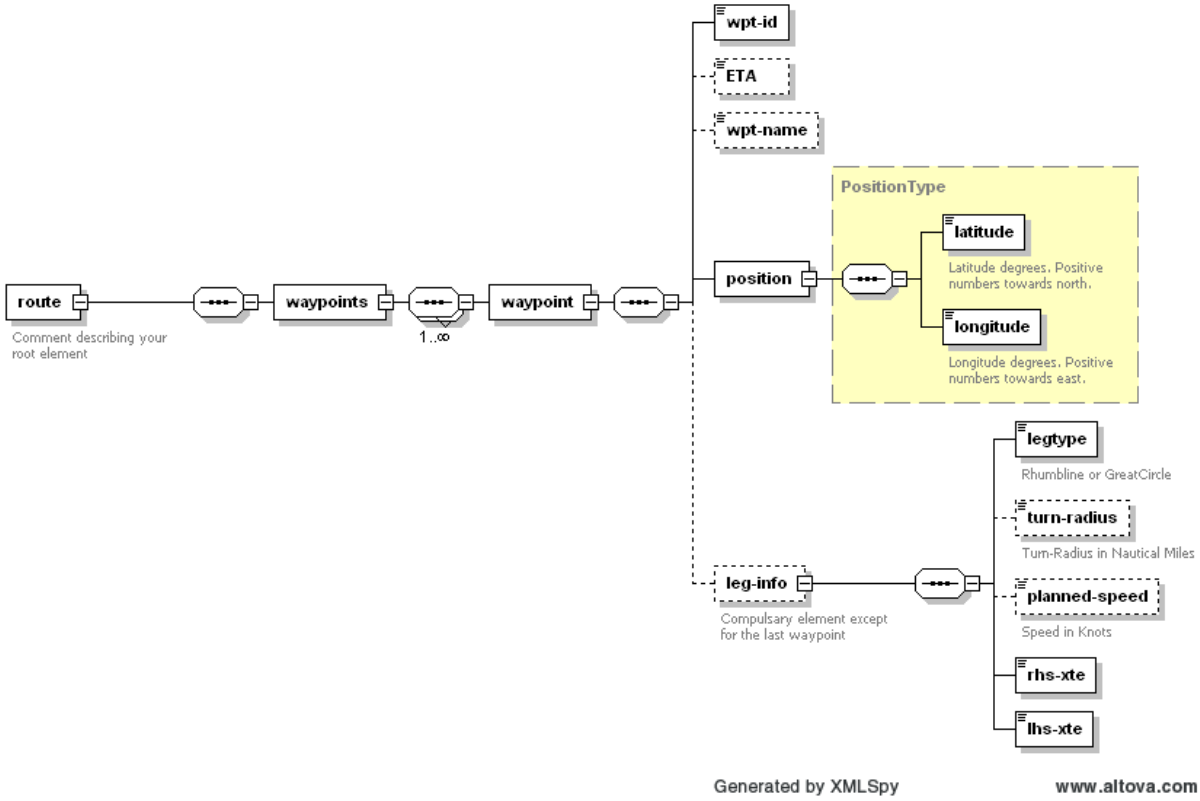
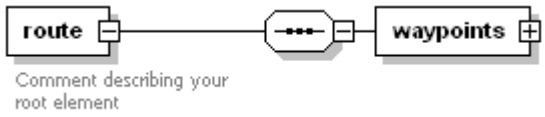


Figure 1, Wapoint XML Schema

schema location: **vessel-waypoint-exchange-7-9-2009.xsd**
attribute form default: **unqualified**
element form default: **qualified**
targetNamespace: **http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange**

Elements	Complex types	Simple types
route	**PositionType**	**XTEType**

element **route**

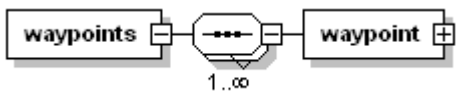
diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
properties	content complex
children	**waypoints**
annotation	documentation Comment describing your root element

source

```
<xs:element name="route">
 <xs:annotation>
  <xs:documentation>Comment describing your root element</xs:documentation>
 </xs:annotation>
 <xs:complexType>
  <xs:sequence>
   <xs:element name="waypoints">
    <xs:complexType>
     <xs:sequence maxOccurs="unbounded">
      <xs:element name="waypoint">
       <xs:complexType>
        <xs:sequence>
         <xs:element name="wpt-id" type="xs:positiveInteger"/>
         <xs:element name="ETA" minOccurs="0"/>
         <xs:element name="wpt-name" minOccurs="0">
          <xs:simpleType>
           <xs:restriction base="xs:string">
            <xs:maxLength value="40"/>
           </xs:restriction>
          </xs:simpleType>
         </xs:element>
         <xs:element name="position" type="PositionType"/>
         <xs:element name="leg-info" minOccurs="0">
          <xs:annotation>
           <xs:documentation>Compulsary element except for the last
waypoint</xs:documentation>
```

```
            </xs:annotation>
            <xs:complexType>
              <xs:sequence>
                <xs:element name="legtype">
                  <xs:annotation>
                    <xs:documentation>Rhumbline or GreatCircle</xs:documentation>
                  </xs:annotation>
                  <xs:simpleType>
                    <xs:restriction base="xs:string">
                      <xs:enumeration value="RHUMBLINE"/>
                      <xs:enumeration value="GREAT-CIRCLE"/>
                    </xs:restriction>
                  </xs:simpleType>
                </xs:element>
                <xs:element name="turn-radius" type="xs:positiveInteger" minOccurs="0">
                  <xs:annotation>
                    <xs:documentation>Turn-Radius in Nautical Miles</xs:documentation>
                  </xs:annotation>
                </xs:element>
                <xs:element name="planned-speed" type="xs:float" minOccurs="0">
                  <xs:annotation>
                    <xs:documentation>Speed in Knots</xs:documentation>
                  </xs:annotation>
                </xs:element>
                <xs:element name="rhs-xte" type="XTEType"/>
                <xs:element name="lhs-xte" type="XTEType"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
 </xs:complexType>
</xs:element>
```

element **route/waypoints**

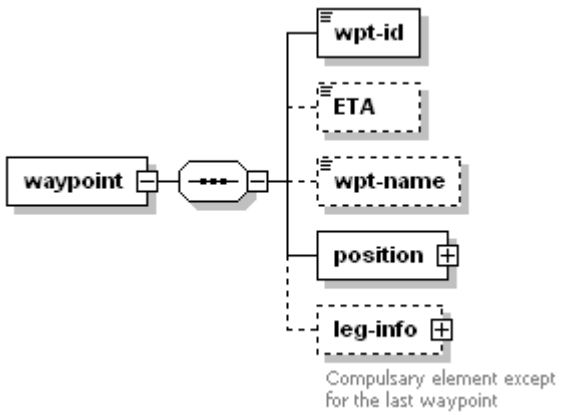
diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
properties	isRef 0 content complex
children	**waypoint**
source	<xs:element name="waypoints">

```
  <xs:complexType>
   <xs:sequence maxOccurs="unbounded">
    <xs:element name="waypoint">
     <xs:complexType>
      <xs:sequence>
       <xs:element name="wpt-id" type="xs:positiveInteger"/>
       <xs:element name="ETA" minOccurs="0"/>
       <xs:element name="wpt-name" minOccurs="0">
        <xs:simpleType>
         <xs:restriction base="xs:string">
          <xs:maxLength value="40"/>
         </xs:restriction>
        </xs:simpleType>
       </xs:element>
       <xs:element name="position" type="PositionType"/>
       <xs:element name="leg-info" minOccurs="0">
        <xs:annotation>
         <xs:documentation>Compulsary element except for the last
waypoint</xs:documentation>
        </xs:annotation>
        <xs:complexType>
         <xs:sequence>
          <xs:element name="legtype">
           <xs:annotation>
            <xs:documentation>Rhumbline or GreatCircle</xs:documentation>
           </xs:annotation>
           <xs:simpleType>
            <xs:restriction base="xs:string">
             <xs:enumeration value="RHUMBLINE"/>
             <xs:enumeration value="GREAT-CIRCLE"/>
            </xs:restriction>
           </xs:simpleType>
          </xs:element>
          <xs:element name="turn-radius" type="xs:positiveInteger" minOccurs="0">
           <xs:annotation>
            <xs:documentation>Turn-Radius in Nautical Miles</xs:documentation>
           </xs:annotation>
          </xs:element>
          <xs:element name="planned-speed" type="xs:float" minOccurs="0">
           <xs:annotation>
            <xs:documentation>Speed in Knots</xs:documentation>
           </xs:annotation>
          </xs:element>
          <xs:element name="rhs-xte" type="XTEType"/>
          <xs:element name="lhs-xte" type="XTEType"/>
         </xs:sequence>
        </xs:complexType>
       </xs:element>
      </xs:sequence>
     </xs:complexType>
    </xs:element>
   </xs:sequence>
```

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

element **route/waypoints/waypoint**

diagram



namespace: http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange

properties: isRef 0, content complex

children: **wpt-id** **ETA** **wpt-name** **position** **leg-info**

source

```
<xs:element name="waypoint">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="wpt-id" type="xs:positiveInteger"/>
      <xs:element name="ETA" minOccurs="0"/>
      <xs:element name="wpt-name" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="40"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="position" type="PositionType"/>
      <xs:element name="leg-info" minOccurs="0">
        <xs:annotation>
          <xs:documentation>Compulsary element except for the last waypoint</xs:documentation>
        </xs:annotation>
        <xs:complexType>
          <xs:sequence>
            <xs:element name="legtype">
              <xs:annotation>
                <xs:documentation>Rhumbline or GreatCircle</xs:documentation>
              </xs:annotation>
              <xs:simpleType>
                <xs:restriction base="xs:string">
                  <xs:enumeration value="RHUMBLINE"/>
                  <xs:enumeration value="GREAT-CIRCLE"/>
```

```
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="turn-radius" type="xs:positiveInteger" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Turn-Radius in Nautical Miles</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="planned-speed" type="xs:float" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Speed in Knots</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="rhs-xte" type="XTEType"/>
        <xs:element name="lhs-xte" type="XTEType"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
 </xs:sequence>
</xs:complexType>
</xs:element>
```

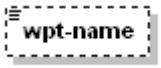
element **route/waypoints/waypoint/wpt-id**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:positiveInteger**
properties	isRef 0 content simple
source	<xs:element name="wpt-id" type="xs:positiveInteger"/>

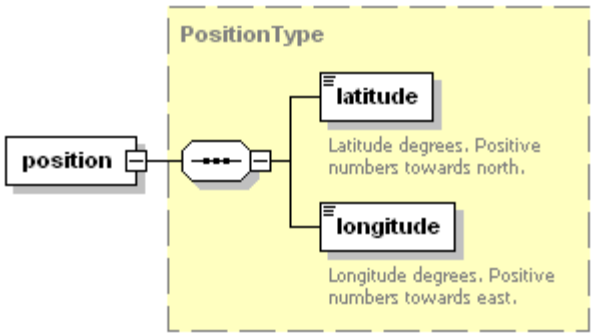
element **route/waypoints/waypoint/ETA**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
properties	isRef 0 minOcc 0 maxOcc 1
source	<xs:element name="ETA" minOccurs="0"/>

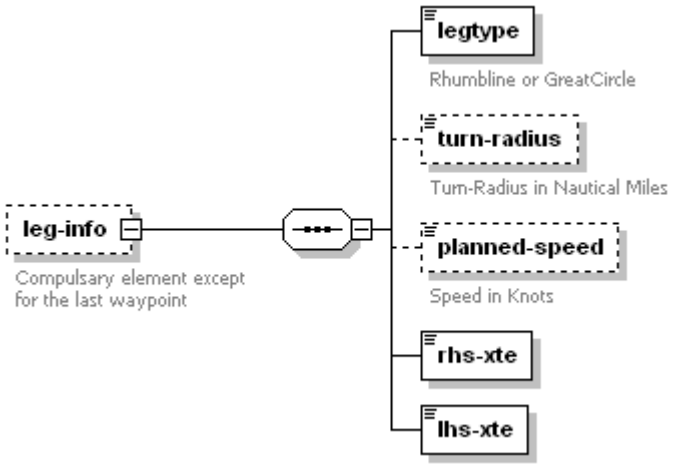
element **route/waypoints/waypoint/wpt-name**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	restriction of **xs:string**
properties	isRef 0 minOcc 0 maxOcc 1 content simple
facets	Kind Value annotation maxLength 40
source	<xs:element name="wpt-name" minOccurs="0"> <xs:simpleType> <xs:restriction base="xs:string"> <xs:maxLength value="40"/> </xs:restriction> </xs:simpleType> </xs:element>

element **route/waypoints/waypoint/position**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**PositionType**
properties	isRef 0 content complex
children	**latitude** **longitude**
source	<xs:element name="position" type="PositionType"/>

element **route/waypoints/waypoint/leg-info**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
properties	isRef 0 minOcc 0 maxOcc 1 content complex
children	**legtype turn-radius planned-speed rhs-xte lhs-xte**
annotation	documentation Compulsary element except for the last waypoint
source	<xs:element name="leg-info" minOccurs="0"> <xs:annotation> <xs:documentation>Compulsary element except for the last waypoint</xs:documentation> </xs:annotation> <xs:complexType> <xs:sequence> <xs:element name="legtype"> <xs:annotation> <xs:documentation>Rhumbline or GreatCircle</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="RHUMBLINE"/> <xs:enumeration value="GREAT-CIRCLE"/> </xs:restriction> </xs:simpleType> </xs:element> <xs:element name="turn-radius" type="xs:positiveInteger" minOccurs="0"> <xs:annotation> <xs:documentation>Turn-Radius in Nautical Miles</xs:documentation> </xs:annotation> </xs:element> <xs:element name="planned-speed" type="xs:float" minOccurs="0"> <xs:annotation> <xs:documentation>Speed in Knots</xs:documentation> </xs:annotation> </xs:element>

```
      <xs:element name="rhs-xte" type="XTEType"/>
      <xs:element name="lhs-xte" type="XTEType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element **route/waypoints/waypoint/leg-info/legtype**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	restriction of **xs:string**
properties	isRef 0 content simple
facets	Kind Value annotation enumeration RHUMBLINE enumeration GREAT-CIRCLE
annotation	documentation Rhumbline or GreatCircle
source	<xs:element name="legtype"> <xs:annotation> <xs:documentation>Rhumbline or GreatCircle</xs:documentation> </xs:annotation> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="RHUMBLINE"/> <xs:enumeration value="GREAT-CIRCLE"/> </xs:restriction> </xs:simpleType> </xs:element>

element **route/waypoints/waypoint/leg-info/turn-radius**

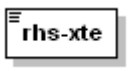
diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:positiveInteger**
properties	isRef 0 minOcc 0 maxOcc 1 content simple
annotation	documentation Turn-Radius in Nautical Miles
source	<xs:element name="turn-radius" type="xs:positiveInteger" minOccurs="0"> <xs:annotation>

```
    <xs:documentation>Turn-Radius in Nautical Miles</xs:documentation>
  </xs:annotation>
</xs:element>
```

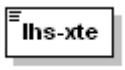
element **route/waypoints/waypoint/leg-info/planned-speed**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:float**
properties	isRef 0 minOcc 0 maxOcc 1 content simple
annotation	documentation Speed in Knots
source	<xs:element name="planned-speed" type="xs:float" minOccurs="0"> <xs:annotation> <xs:documentation>Speed in Knots</xs:documentation> </xs:annotation> </xs:element>

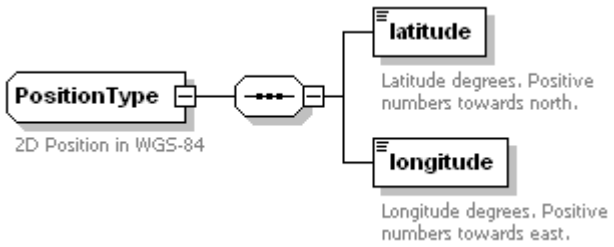
element **route/waypoints/waypoint/leg-info/rhs-xte**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**XTEType**
properties	isRef 0 content simple
source	<xs:element name="rhs-xte" type="XTEType"/>

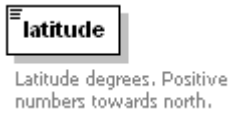
element **route/waypoints/waypoint/leg-info/lhs-xte**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**XTEType**
properties	isRef 0 content simple
source	<xs:element name="lhs-xte" type="XTEType"/>

complexType **PositionType**

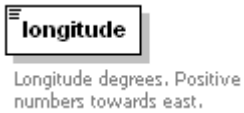
diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
children	**latitude** **longitude**
used by	element **route/waypoints/waypoint/position**
annotation	documentation 2D Position in WGS-84
source	<xs:complexType name="PositionType"> <xs:annotation> <xs:documentation>2D Position in WGS-84</xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="latitude" type="xs:double"> <xs:annotation> <xs:documentation>Latitude degrees. Positive numbers towards north.</xs:documentation> </xs:annotation> </xs:element> <xs:element name="longitude" type="xs:double"> <xs:annotation> <xs:documentation>Longitude degrees. Positive numbers towards east.</xs:documentation> </xs:annotation> </xs:element> </xs:sequence> </xs:complexType>

element **PositionType/latitude**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:double**
properties	isRef 0 content simple
annotation	documentation Latitude degrees. Positive numbers towards north.
source	<xs:element name="latitude" type="xs:double"> <xs:annotation>

```
    <xs:documentation>Latitude degrees. Positive numbers towards north.</xs:documentation>
  </xs:annotation>
</xs:element>
```

element **PositionType/longitude**

diagram	
namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:double**
properties	isRef 0 content simple
annotation	documentation Longitude degrees. Positive numbers towards east.
source	<xs:element name="longitude" type="xs:double"> <xs:annotation> <xs:documentation>Longitude degrees. Positive numbers towards east.</xs:documentation> </xs:annotation> </xs:element>

simpleType **XTEType**

namespace	http://www.navielektro.fi/ns/formats/vessel-waypoint-exchange
type	**xs:int**
used by	elements **route/waypoints/waypoint/leg-info/lhs-xte** **route/waypoints/waypoint/leg-info/rhs-xte**
annotation	documentation XTE (Cross Track Error) in meters from the center of the route/leg
source	<xs:simpleType name="XTEType"> <xs:annotation> <xs:documentation>XTE (Cross Track Error) in meters from the center of the route/leg</xs:documentation> </xs:annotation> <xs:restriction base="xs:int"/> </xs:simpleType>