UM Aquo export

Introduction

The UM Aquo file format is a special XML format to exchange all types of time series data, defined by the Dutch IDsW. In FEWS it can only be used to export sample time series. Currently only the format version of 2009 is supported.

More information on the UM Aquo file format can be found IDsW internet site for UM Aquo:

http://www.aquo.nl/aquo-standaard/um-aquo/

The Export module in FEWS exports requires many additional information that should be supplied to the export module by using an idMap. In this idMap the next four external qualifiers should be defined:

1. externalQualifier1 : eenheid
2. externalQualifier2 : hoedanigheid
3. externalQualifier3 : compartiment
4. externalQualifier4 : <landcode>;<waterbeheerderCode>;<waterbeheerder>

All codes are listed in:

- unit / eenheid
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_eenheid.xsd
- hoedanigheid
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheid_2009.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidfractiebasis.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_referentierichting.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_typereferentievlak_2009.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidequivalent.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidreferentiebasis.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_referentieplaats.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_koolwaterstoffractie.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_korrelgroottefractie.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_golffrequentieklasse.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_biologischkenmerk.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidonterecht.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidcombinatie.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_hoedanigheidtechnisch.xsd
- compartiment
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_compartiment_2009.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_medium_2009.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_milieucompartiment.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_compartimentbiotoop.xsd
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_compartimenttechnisch.xsd
- landcode
  - always: NL (it is a Dutch standard only...)
- waterbeheerderCode and waterbeheerder
  - http://www.aquo.nl/Aquo/schemas/Aquo-domein_waterbeheerder.xsd

Example flagConversionFile

```
<flagConversions xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/flagConversions.xsd">
  <flagConversion>
    <inputFlag>     <value>0</value></inputFlag>
    <outputFlag>    <value>0</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>1</value></inputFlag>
    <outputFlag>    <value>0</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>2</value></inputFlag>
    <outputFlag>    <value>0</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>3</value></inputFlag>
    <outputFlag>    <value>50</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>4</value></inputFlag>
    <outputFlag>    <value>50</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>5</value></inputFlag>
    <outputFlag>    <value>50</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>6</value></inputFlag>
    <outputFlag>    <value>99</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>7</value></inputFlag>
    <outputFlag>    <value>50</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>8</value></inputFlag>
    <outputFlag>    <value>50</value></outputFlag>
  </flagConversion>
  <flagConversion>
    <inputFlag>     <value>9</value></inputFlag>
    <outputFlag>    <value>99</value></outputFlag>
  </flagConversion>
  <defaultOuputFlag><value>0</value></defaultOuputFlag>
  <missingValueFlag><value>99</value></missingValueFlag>
</flagConversions>
```

Example idMap

Below an example idMap file is listed that is used within the export for timeseries of the waterboard Vallei en Eem in the Netherland. That is why landcode=NL, waterbeheerderCode=10 and waterbeheerder=Waterschap Vallei en Eem.

```
<idMap xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:
schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/idMap.xsd" version="1.1">
        <!--         external: UM Aquo parameter
                        internal: FEWS parameter
                        externalQualifier1 : eenheid
                        externalQualifier2 : hoedanigheid
                        externalQualifier3 : compartiment
                        externalQualifier4 : landcode;waterbeheerderCode;waterbeheerder
        -->
        <!-- Temperatuur parameters-->
        <parameter external="T;Temperatuur" internal="T_meting_lucht" externalQualifier1="oC;graad Celsius"
externalQualifier2="NVT;Niet van toepassing" externalQualifier3="LT;Lucht" externalQualifier4="NL;10;Waterschap
Vallei en Eem"/>
        <parameter external="T;Temperatuur" internal="T_meting_oppwater" externalQualifier1="oC;graad Celsius"
externalQualifier2="NVT;Niet van toepassing" externalQualifier3="OW;" externalQualifier4="NL;10;Waterschap
Vallei en Eem"/>
        <parameter external="T;Temperatuur" internal="T_meting_grondwater" externalQualifier1="oC;graad
Celsius" externalQualifier2="NVT;Niet van toepassing" externalQualifier3="GW:Grondwater" externalQualifier4="NL;
10;Waterschap Vallei en Eem"/>
        <!-- Hoogte parameters-->
        <parameter external="WATHTE;Waterhoogte" internal="WATHTE_meting" externalQualifier1="m;meter"
externalQualifier2="NAP;t.o.v. Normaal Amsterdams Peil" externalQualifier3="OW;Oppervlaktewater"
externalQualifier4="NL;10;Waterschap Vallei en Eem"/>
        <!-- Neerslag parameters-->
        <parameter external="NEERSG;Neerslag" internal="NEERSG_meting" externalQualifier1="ml;milliliter"
externalQualifier2="NVT;Niet van toepassingl" externalQualifier3="HW;Hemelwater" externalQualifier4="NL;10;
Waterschap Vallei en Eem"/>
        <!-- Debiet parameters-->
        <parameter external="Q;Debiet" internal="Q_meting" externalQualifier1="m3/s;kubieke meter per seconde"
externalQualifier2="NVT;Niet van toepassingl" externalQualifier3="OW;Oppervlaktewater" externalQualifier4="NL;
10;Waterschap Vallei en Eem"/>
        <parameter external="Q;Debiet" internal="Q_berekend" externalQualifier1="m3/s;kubieke meter per
seconde" externalQualifier2="NVT;Niet van toepassingl" externalQualifier3="OW;Oppervlaktewater"
externalQualifier4="NL;10;Waterschap Vallei en Eem"/>
        <parameter external="Q;Debiet" internal="Q_totaal" externalQualifier1="m3/s;kubieke meter per seconde"
externalQualifier2="NVT;Niet van toepassingl" externalQualifier3="OW;Oppervlaktewater" externalQualifier4="NL;
10;Waterschap Vallei en Eem"/>
        <!-- Druk parameters-->
        <parameter external="DRUK;Druk" internal="DRUK_meting_lucht" externalQualifier1="B;Beaufort"
externalQualifier2="NVT;Niet van toepassingl" externalQualifier3="LT;Lucht" externalQualifier4="NL;10;
Waterschap Vallei en Eem"/>
</idMap>
```

Java souce code

UMAquo2009TimeSeriesSerializer.java