



Thula.DoseConverter Technical Specification

E-resept Forskrivningsmodul

Thula – Nordic Source Solutions

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1 Document control

This section describes how to version, file, distribute and improve this document.

1.1 Revision tracking

This document is subject to revision control so that after each formal change a new version shall be created with a new data and revision number. At any given time the revision with the highest version number is considered the official and valid version of this document.

1.2 Document source, storage and distribution

The source of this document is maintained by Thula. It is stored in the Thula document repository in the following folder:

- E-resept \ System Documentation \ Paper Based

This document shall be distributed in PDF format only.

1.3 Revision history

Date	Version	Author/Approved by	Description
Release 1.0.13			
2014-10-27	1.1	Atli Sturluson	New methods added: GetDssnKortdoseList, MatchStructuredDosing and two new overloads of GetDssnKortdose
Release 1.0			
2013-04-16	1.0	Atli Sturluson	Initial version

1.4 Reader comments

If you have any comments on the contents of this document please send those by e-mail to egir.leifsson@thula.is. If a review result in changes, all users of this document should be notified.

2 Introduction

This document contains a technical description of the Thula.DoseConverter dll.

3 Interface specification

3.1 Methods in Thula.DoseConverter dll

The dll exposes two methods in a class called Thula.DoseConverter.DoseConverter.

3.1.1 GetDssnKortdose

This method converts a list of Dosing elements to free text Dssn and a kortdose.

There are four different versions of this method:

- One that takes as input an object of type Doseringer which contains a list of Dosing objects representing a complete structured dosing scheme.
- One that accepts a string containing an XML representation of a list of Dosing.
- One that takes as input a list of Dosing objects
- One that takes as input a list of Dosing objects and a boolean flag that indicates if the this is an anti-coagulant prescription.

All versions of the method return an instance of class DssnKortdose that indicates the success or failure of the conversion, along with an eventual Dssn test and a CV instance containing a kortdose. If the conversion is not successful, both Dssn and Kortdose will be null in the DssnKortdose.

3.1.2 GetDssnKortdoseList

This method converts a list of Dosing elements to free text Dssn and a list of matching kortdoses. It takes as input a list of Dosing objects and a boolean flag that indicates if the this is an anti-coagulant prescription.

The method returns an instance of class DssnKortdoseList that indicates the success or failure of the conversion, along with an eventual Dssn test and a list of CV instances containing all kortdoses that match the input parameters. If the conversion is not successful, both Dssn and Kortdose will be null in the DssnKortdoseList.

3.1.3 GetStructuredDose

This method looks up a template for structured dosing based on a kortdose. It takes two parameters:

kortdose: The CV encoded kortdose to find a structured dosing template for. This should be from kodeverk 7478.

doseUnit: The CV encoded dose unit (enhet for dosering) to use when interpreting the kortdose. This should be from kodeverk 7480.

The method returns an instance of StructuredDose that indicates the success or failure of looking up structured dosing for the given kortdose, along with an eventual structured dosing represented as a list of Dosing instances.

3.1.4 MatchStructuredDosing

This method compares two lists of Dosing elements to see if they represent the same structured dosing. It returns a Boolean value that indicates if they are the same.

3.2 Data types

3.2.1 Thula.DoseConverter.DataModel.Doseringer

This class represents a collection of Doseringer instances. An instance of this class can be enumerated in a “foreach”-loop or iterated over in a “for”-loop to get the individual Doseringer instances.

3.2.2 Thula.DoseConverter.DataModel.Forskrivning.V2010_04_01.Doseringer

This class represents the Doseringer element from schema Forskrivning-2010-04-01-BF3.xsd. The class is auto-generated from that schema using the linqtosd tool (<http://linqtosd.codeplex.com/>).

3.2.3 Thula.DoseConverter.DssnKortdose

Defines a type that represents result of converting a kortdose to structured dosing.

Property	Description
DssnKortdoseResult	The result (success or failure) of converting structured dosing to free text Dssn.. It can be one of the following enum values DssnKortdoseResult.Success – The conversion was successful. This means that a Dssn text representing the structured dose was generated. Note that a kortdose may not have been found. DssnKortdoseResult.ComplexDosing – The dosing provided is too complex to be represented as text. DssnKortdoseResult.InvalidDoseringer – The provided Doseringer data is structurally invalid. DssnKortdoseResult.SemanticError – The provided Doseringer data does not follow best-practices and cannot be converted to free text..
Dssn	A free text representation of the provided dosing. This property returns null if the dosing could not be converted to free text.
Kortdose	A CV encoded kortdose from kodeverk 7478 that represents the provided dosing. This property returns null if a kortdose could not be found for the dosing. Note that this property can return null even if Dssn contains a non-null value.

3.2.4 Thula.DoseConverter.StructuredDose

Defines a type that represents result of converting a kortdose to structured dosing.

Property	Description
Result	The result (success or failure) of converting a kortdose to structured dosing. It can be one of the following enum values StructuredDoseResult.Success – Structured dosing was successfully found for the given kortdose. StructuredDoseResult.InvalidKortdose – The given kortdose was invalid (most likely either the V or S field is empty or missing). StructuredDoseResult.UnsupportedKortdose – Structured dosing could not be found for the given kortdose.
Doseringer	A list of Doseringer instances that represent a structured dosing determined from a kortdose. This property returns null if Result does not equal StructuredDoseResult.Success.
DoseringerXml	A textual representation of the structured dosing given in the Doseringer property. This property returns null if Result does not equal StructuredDoseResult.Success.

4 Appendix A: XSD for Doseringer

```
<schema xmlns:kith="http://www.kith.no/xmlstds"
xmlns:xsd="http://www.w3.org/2001/XMLSchema.xsd"
```

```

xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:doseconverter="http://www.thula.no/DoseConverter/2013-04-12"
xmlns:fs="http://www.kith.no/xmlstds/eresept/forskrivning/2010-04-01"
targetNamespace="http://www.thula.no/DoseConverter/2013-04-12"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="http://www.kith.no/xmlstds/eresept/forskrivning/2010-04-01"
  schemaLocation="eResept-Meldingsdefinisjoner-V2.4-2012-10-31/felles/Forskrivning-2010-
  04-01-BF3.xsd"/>
  <element name="Doseringer">
    <complexType>
      <sequence>
        <element ref="fs:Dosering" minOccurs="0" maxOccurs="unbounded"/>
      </sequence>
    </complexType>
  </element>
</schema>

```

5 Appendix B: Sample code

```

using System;
using System.Collections.Generic;
using Thula.DoseConverter;
using Thula.DoseConverter.DataModel;
using Thula.DoseConverter.DataModel.Forskrivning.V2010_04_01;
using Thula.DoseConverter.DataModel.Std;

namespace DoseConverterTester
{
    static class Program
    {
        static void Main()
        {
            var doseConverter = new DoseConverter();

            // convert structured dosering to Dssn and kortdose
            var dosering = new Doseringer(new[]
            {
                new Dosering
                {
                    Starttidspunkt = new TS {V = "2013-01-28"},
                    DoseFasttidspunkt =
                        new List<DoseFastTidspunkt>
                        {
                            new DoseFastTidspunkt
                            {
                                Intervall = new PQ {V =
2, U = "Døgn"},
                                Tidsomrade = new CS {V
= "1", DN = "Morgen"},
                                Mengde = new PQ {V =
0.5, U = "tablett"}
                            }
                        },
                },
            });

            var dssnKortdose = doseConverter.GetDssnKortdose(dosering);
            Console.WriteLine(string.Format("\nGetDssnKortdose result: {0}",
dssnKortdose.DssnKortdoseResult));
            Console.WriteLine(string.Format("\nDssn result: {0}", dssnKortdose.Dssn));
            Console.WriteLine(string.Format("\nKortdose result: {0}",
dssnKortdose.Kortdose));

```

```
}  
  }  
}
```