

**Semantic Publications of Charter
Corpora (The Case of a Diplomatic
Edition of the Complex of Old
Russian Charters “Moscovitica–
Ruthenica”)**

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Naples, September 30, 2011

Semantic publication: concept and implementations

- David Shotton et al. “Adventures in Semantic Publishing: Exemplar Semantic Enhancements of a Research Article,” *PLoS Computational Biology*, 2009, 5 (4): e1000361.
doi:10.1371/journal.pcbi.1000361
- Anita de Waard. “From Proteins to Fairytales: Directions in Semantic Publishing,” *IEEE Intelligent Systems*, March/April 2010, vol. 25, no. 2: 83-88

Semantic layers

- terms and concepts that are linked with terminological vocabularies
- “facts about the texts” (metadata) that are represented in the form of triplets (subject-predicate-object)
- formalized representations of scholarly discourse

The advantages of semantic publications

- semantic publications provide better facilities for searching for information
- semantic publications can be used as knowledge bases in order to generate new knowledge and/or hypotheses for further research

Charter corpus “Moscowitica – Ruthenica”

Collection of documents that reflect relations of Old Russian and Byelorussian lands and towns – Smolensk, Novgorod, Pskov, Polotsk, etc., as well as Lithuania (later – Poland-Lithuania) with Riga, Livonia, Hanseatic League and German towns in the late 12th – early 17th centuries

Latvian National Archives – Latvian State Historical Archives (Riga), record group no. 673, inventory no. 4; record group no. 8, inventories nos. 3 & 4; record group no. 214

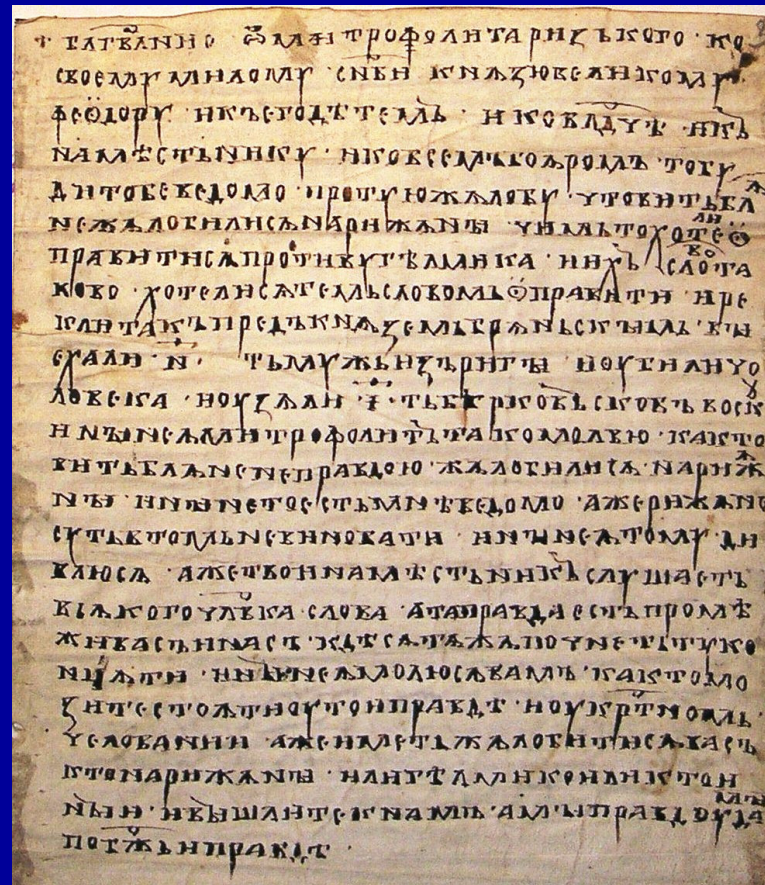
Charter no. 6

Missive of archbishop of Riga Johann II. von Vechten (?) to Fedor Rostislavich, prince of Smolensk, blaming inhabitants of Vitebsk for unjustified complaint against Rigans

Riga. [1284-1297, presumably 1285–1287]

Duplicate (draft document?). Parchment, 16,5 × 23,3 cm

Latvian National Archives – Latvian State Historical Archives, Riga. Record group No. 673. Inventory No. 4. Kasten No. 18. File No. 8. Page 3 recto



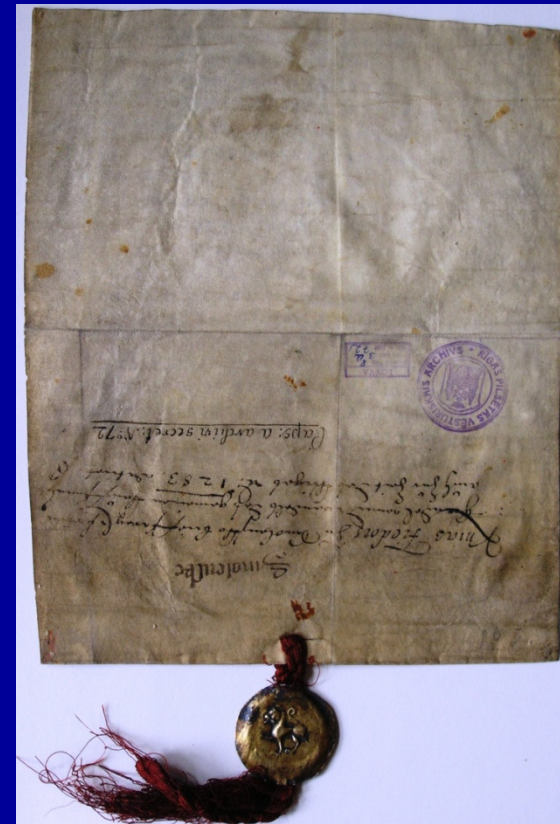
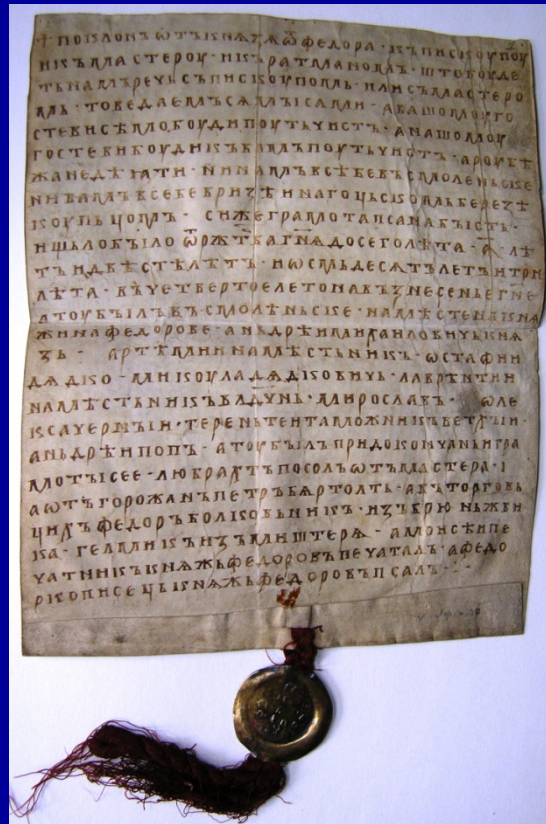
Charter no. 4

Missive of Fedor, prince of Smolensk, to the authorities of Riga granting German merchants free passage to Rus and confirming the treaty concluded in 1229

Smolensk. [May 18], 1284

Original. Parchment, 20,0 × 24,5 cm

Latvian National Archives – Latvian State Historical Archives, Riga. Record group No. 8. Inventory No. 3. Capsula A. No. 72. Page 1



Charter No. 3a

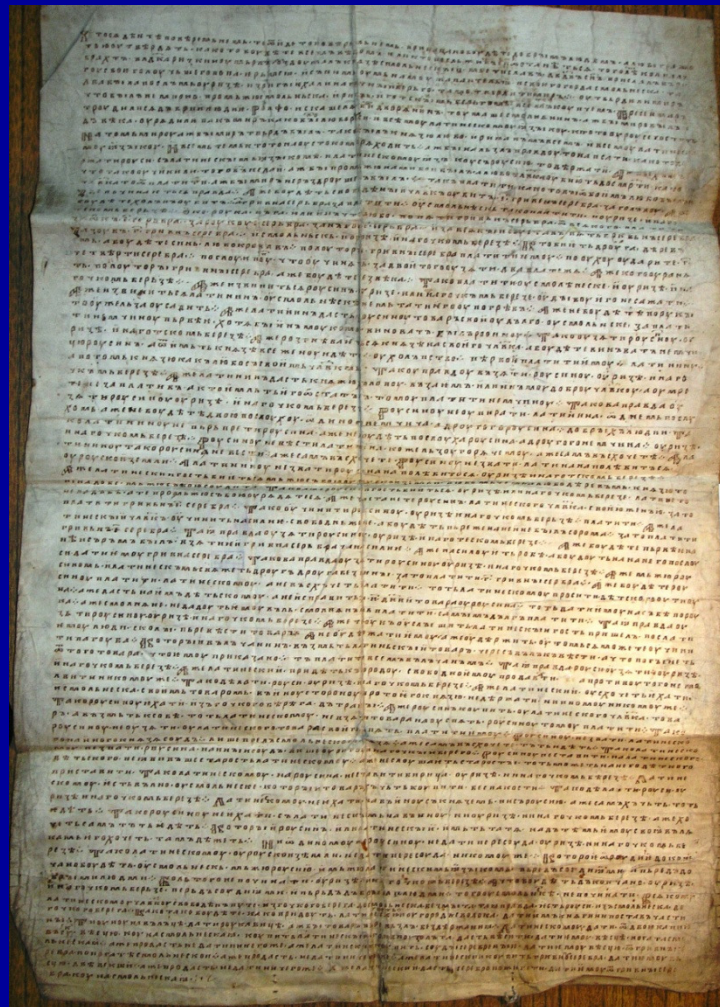
Treaty between Smolensk, Riga and Gotland, version A

[Gotland]. 1229

Original. Parchment, 53,5 × 77,8 cm

Latvian National Archives – Latvian State Historical Archives, Riga. Record group No. 8. Inventory No. 3. Capsula A. No.14.

Page 1



Diplomatic transcription (Charter no. 6, fragment)

`<tenor>`
† блѣвл^нне · ѿ мн^итро^{ф emphatic}олнта рнзького · ко `<lb n="1"/>`
своему мнлому · сѣвн кназю велнкому `<lb n="2"/>`
феѡдору · н къ его дѣтемъ · н ко влѣкъ н къ `<lb n="3"/>`
намѣстъннку · н ко всемъ боаромъ · то бу `<lb n="4"/>`
дн тобе ведомо · про тую жалобу · что внтѣбл[^]`<super>^</super>`
`<lb n="5"/>`
не жалобнлнса на рнжаны · ҃нмь то

Semantics of symbols and modes of its representation

- TEI:

```
<charDecl>
  <glyph xml:id="n1">
    <glyphName>SMALL CAPITAL CIRILLIC N LIKE LATIN N</glyphName>
    <mapping type="standardized">H</mapping>
  </glyph>
</charDecl>

.....

<g ref="#n1">N</g>
```

- Rules for automatic substitution of symbols:
IF “N” THEN “H”
- Development of a special Web-font (e.g. SVG-font, in which small capital letter “N” is used instead of Cyrillic “H”)

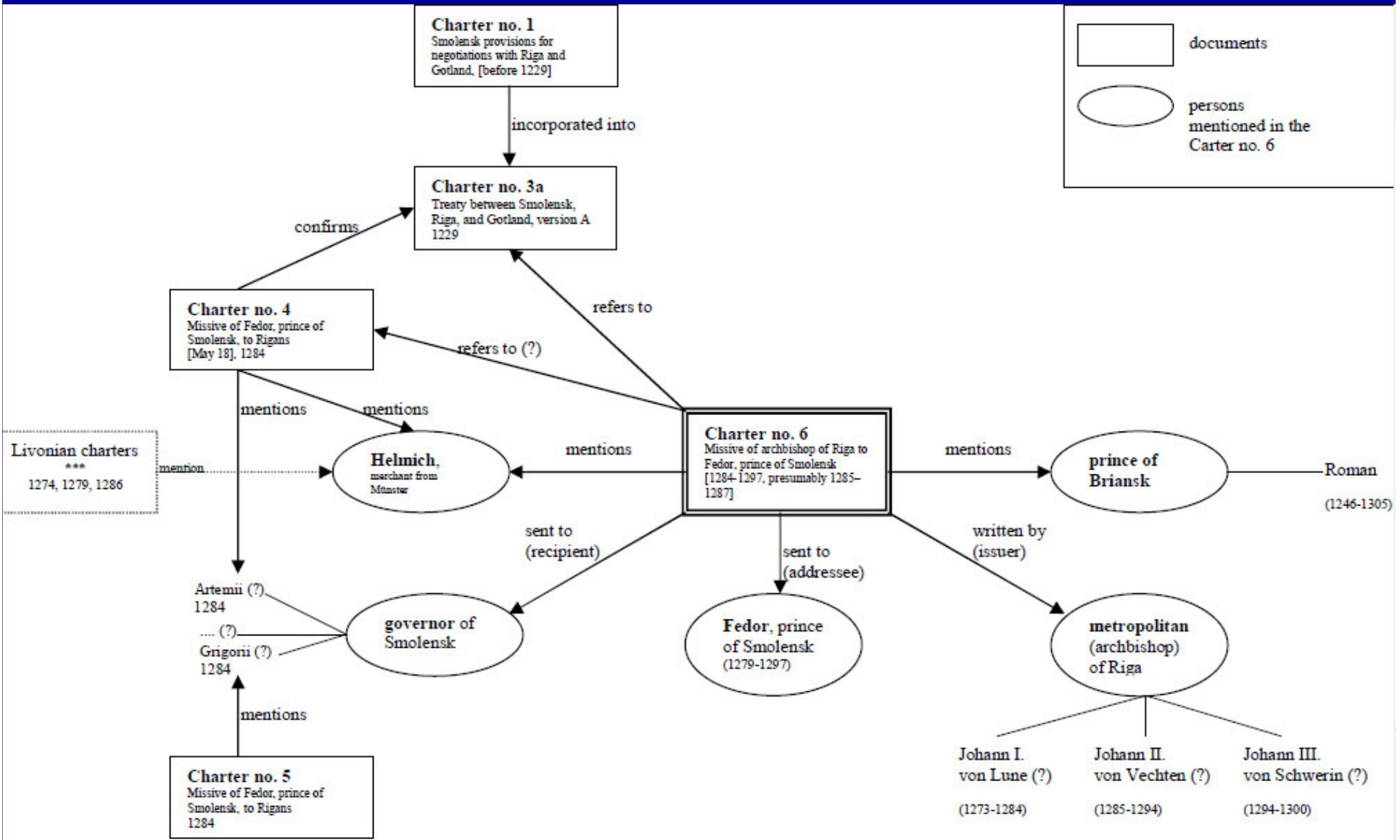
Markup of the Charter no. 6 that reveals historical data

```
<charter id="6">
<chDesc> ... </chDesc>
<tenor>
† <issuer> <roleName id="archbishop"> Metropolitan's </roleName> of Riga </issuer>
benediction over <lb n="1"/> our beloved sun, <addressee> <persName id="Fedor
Rostislavich prince of Smolensk"> <roleName id="Grand Prince"> Grand Prince </roleName>
<lb n="2"/> Fedor </persName> </addressee>, and over his children, and over the bishop
<supplied> of Smolensk </supplied>, and over <lb n="3"/> <recipient> <roleName id=
"governor of Smolensk"> the governor </roleName> <supplied> of Smolensk </supplied>
</recipient>, and over all boyars. You <lb n="4"/> should know about that complaint,
which the inhabitants of <placeName> Vitebsk </placeName> <lb n="5"/> lodged against
Rigans in order <lb n="6"/> to set themselves right with <persName id="Helmich merchant
from Munster"> Helmich</persName>. And their words were as follows - <lb n="7"/> they
wanted to justify themselves with those words - and <supplied> they </supplied> said <lb n=
"8"/> to <roleName id="prince of Briansk"> prince of <placeName>Briansk</placeName>
</roleName> that <lb n="9"/> 50 men had ridden out of <placeName>Riga</placeName>, and
killed a man, <lb n="10"/> and taken 10 <term>berkovets</term> of wax. <lb n="11"/> And
now I, metropolitan, say that those <lb n="12"/> inhabitants of <placeName>Vitebsk
</placeName> unjustly complained on Rigans. <lb n="13"/> And now I know that Rigans <lb n=
"14"/> are not guilty of that. And now I am surprised <lb n="15"/> that thy governor
listen to <lb n="16"/> anyone. But there is <reference_to_other_document> an agreement <lb n=
"17"/> between you and us: if a controversy arouses, it should be settled <supplied>
between you and us </supplied> </reference_to_other_document>. <lb n="18"/> And now I
pray that you would <lb n="19"/> observe <reference_to_other_document> that agreement and
oath: </reference_to_other_document> <lb n="20"/> if anyone complains to you <lb n="21"/>
about Rigans, or <persName id="Helmich merchant from Munster"> Helmich</persName>, or
somebody else, <lb n="22"/> you should send <supplied> a missive </supplied> to us, but
we will render justice <lb n="23"/> in accordance with divine justice. <lb n="24"/>
</tenor>
</charter>
```

Specialized historical ontologies

- CIDOC CRM (le Comité International pour la Documentation – Conceptual Reference Model)
- Nancy Ide and David Woolner (Franklin D. Roosevelt Presidential Library, Pearl Harbor project, USA)
- Eero Hyvönen et al. (CultureSampo, Finland)

Semantic network





Semantic networks technologies

- RDF (Resource Descriptive Framework),
OWL (Ontological Web Language)

versus

- Semantic Wiki-systems

Transcription of the Charter no. 6 on site histdocs.referata.com

Be6 histdocs.referata.com/wiki/Charter_6   Искать в Google



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Charter 6

Missive of archbishop of Riga Johann II von Vechten (?) to Fedor Rostislavich, prince of Smolensk, blaming inhabitants of Vitebsk for unjustified complaint against Rigans

Riga. [1284-1297, presumably 1285-1287]. Duplicate (draft document?). Parchment, 16,5 x 23,3 cm. Translated from Old Russian into English. Latvian National Archives - Latvian State Historical Archives, Riga (Latvijas Nacionālais arhivs - Latvijas Valsts vēstures arhivs). Record group No. 673. Inventory No. 4. Kasten No. 18. File No. 8. Page 3 recto.

Metropolitan's of Riga benediction over our beloved sun, **Grand Prince Fedor**, and over his children, and over **the bishop of Smolensk**, and over **the governor of Smolensk**, and over all boyars. You should know about that complaint, which the inhabitants of lodged against Rigans in order to set themselves right with **Helmich**. And their words were as follows - they wanted to justify themselves with those words - and they said to **prince of Briansk** that 50 men had ridden out of Riga, and killed a man, and taken 10 berkovets of wax. And now I, metropolitan, say that those inhabitants of Vytebsk unjustly complained on Rigans. And now I know that Rigans are not guilty of that. And now I am surprised that the governor listen to anyone. But there is **an agreement between you and us**: if a controversy arouses, it should be settled between you and us. And now I pray that you would **observe that agreement and oath**: if anyone complains to you about Rigans, or **Helmich**, or somebody else, you should send a missive to us, but we will render justice in accordance with divine justice.

Facts about Charter 6  [RDF feed](#) 

- Mentions** [Helmich](#) +  and [Prince of Briansk](#) + 
- Probably refers to** [Charter 4](#) + 
- Refers to** [Charter 3a](#) + 
- Sent to** [Fedor Rostislavich, prince of Smolensk](#) + , [Bishop of Smolensk](#) +  and [Governor of Smolensk](#) + 
- Written by** [Archbishop of Riga](#) + 

SMW (Semantic MediaWiki) markup Charter no.6

```
[[wrtitten_by::archbishop of Riga|Metropolitan's of Riga]]  
benediction over our beloved sun, [[sent_to::Fedor Rostislavich,  
prince of Smolensk|Grand Prince Fedor]], and over his children,  
and over [[sent_to::bishop of Smolensk|the bishop of Smolensk]],  
and over [[sent_to::governor of Smolensk|the governor of  
Smolensk]], and over all boyars. You should know about that  
complaint, which the inhabitants of lodged against Rigans in  
order to set themselves right with [[mentions::Helmich]]. And  
their words were as follows - they wanted to justify themselves  
with those words - and they said to [[mentions::prince of  
Briansk]] that 50 men had ridden out of Riga, and killed a man,  
and taken 10 berkovets of wax. And now I, metropolitan, say that  
those inhabitants of Vytebsk unjustly complained on Rigans. And  
now I know that Rigans are not guilty of that. And now I am  
surprised that the governor listen to anyone. But there is  
[[refers_to::Charter 3a|an agreement between you and us]]: if a  
controversy arouses, it should be settled between you and us.  
And now I pray that you would [[probably_refers_to::Charter  
4|observe that agreement and oath]]: if anyone complains to you  
about Rigans, or [[Helmich]], or somebody else, you should send  
a missive to us, but we will render justice in accordance with  
divine justice.
```


Helmich

Helmich is a **merchant** from **Münster**. He is mentioned in **Charter 6** and **Charter 4**.

Facts about Helmich ⓘ

- Is a** **Merchant** + 🔍
- Is from** **Münster** + 🔍
- Is mentioned in** **Charter 6** + 🔍 and **Charter 4** + 🔍

Charter 4

This charter confirms **Charter 3a**. It mentions **Helmich** and **Artemii**. It is probably referred in **Charter 6**.

Facts about Charter 4 ⓘ

- Confirms** **Charter 3a** + 🔍
- Is probably referred in** **Charter 6** + 🔍
- Mentions** **Helmich** + 🔍 and **Artemii** + 🔍

Markup of the Charter no. 6

for the purposes of pattern
analysis

```
<tenor>
<protocol>
<invocatio>†</invocatio> <intitulatio> Metropolitan's of Riga </intitulatio> <salutatio>
benediction over </salutatio> <lb n="1"/> <inscriptio> our beloved sun, Grand Prince <lb n
="2"/> Fedor, and over his children, and over the bishop <supplied> of Smolensk
</supplied>, and over <lb n="3"/> the governor <supplied> of Smolensk </supplied>, and
over all boyars. </inscriptio>
</protocol>
<context>
<publicatio> You <lb n="4"/> should know about </publicatio> <narratio> that complaint,
which the inhabitants of Vitebsk <lb n="5"/> lodged against Rigans in order <lb n="6"/>
to set themselves right with Helmich. And their words were as follows - <lb n="7"/> they
wanted to justify themselves with those words - and <supplied>they</supplied> said <lb n=
"8"/> to prince of Briansk that <lb n="9"/> 50 men had ridden out of Riga, and killed a
man, <lb n="10"/> and taken 10 berkovets of wax. </narratio> <lb n="11"/> <dispositio>
<clause id="1"> And now I, metropolitan, say that those <lb n="12"/> inhabitants of
Vitebsk unjustly complained on Rigans. </clause> <lb n="13"/> <clause id="2"> And now I
know that Rigans <lb n="14"/> are not guilty of that. </clause> <clause id="3"> And now I
am surprised <lb n="15"/> that thy governor listen to <lb n="16"/> anyone. </clause>
</dispositio> <narratio> But there is an agreement <lb n="17"/> between you and us: if a
controversy arouses, it should be settled <supplied> between you and us </supplied>.
</narratio> <lb n="18"/> <request> And now I pray that you would <lb n="19"/> observe
that agreement and oath: <lb n="20"/> if anyone complains to you <lb n="21"/> about
Rigans, or Helmich, or somebody else, <lb n="22"/> you should send <supplied> a missive
</supplied> to us, but we will render justice <lb n="23"/> in accordance with divine
justice </request> <lb n="24"/>
</context>
</tenor>
</charter>
```

Visualization of document structures (sub-complex of Polotsk charters, 15th century)

pg002	pg005	pg007	pg008	pg010
<p>2 а што ѿ ѿспдрь наш ѿсвѣценыи великии королъ его млсѣть казалъ нам забавити ваши товары што за наши щкоды што намъ ѿ вашѣи млсѣти оучинѣны</p> <p>4 И ваша млсѣть просили ѿспдра нашогъ ѿсвѣценого великогъ корола</p> <p>2 и ѿспдрь нашъ его млсѣть казалъ нам товары ваши вѣрнут вам до тых часовъ докоулъ нам і вашѣи млсѣти право перейдет какъ его млсѣть ѡуказалъ</p> <p>5 И ваша млсѣть прислали до насъ</p>	<p>3 а такожѣ паматаѣте ваша млсѣть сами</p> <p>2 ижѣ некоторый рѣчи были полочаномъ нашимъ с вами передъ паномъ нашимъ ѿсвѣценымъ кролемъ ѿ куплахъ и ѿ кривдахъ межи вами</p> <p>2 и панъ нашъ ѣго млсѣть ѿсвѣценыи кролъ оумовилъ с вашею млсѣтью и положилъ рокъ тому ильинъ днѣ а казалъ былъ ѣго млсѣть там сѣ съѣхати к тому року мнѣ а пану миколаю немировичоу воєводе витебъскому и мценъскому а пану богдану андреѣвичоу моршалкоу своѣмоу</p>	<p>1 такожѣ даѣмъ вашей млсѣти вѣдати</p> <p>2 што нашъ панъ нааснейший и ѿсвѣценыи кролъ ѣго млсѣть приказалъ намъ паномъ мнѣ а брату моѣму пану миколаю немировичоу а брату моему пану богдану андреѣвичоу моршалкоу своѣму снѣтисѣ с вами на мѣки бжѣеѣ днѣ после днѣѣ на индрици</p> <p>8 ино мы на тотъ рокъ конечно тамъ боудемъ</p> <p>7 а ваша млсѣть безъ замешканья к тому року будете бы тому дѣлу межи и ваше</p>	<p>2 што ѿспдрь нашъ освѣцѣныи великии королъ ѣго млсѣть вказалъ нам выдати товары которыи бы ли забраны оу рижан</p> <p>3 ино боурьмистры и радци и ратманы ризкщго мѣста прислали по тьи товары слоугу своѣго ратоушкогъ на има ѡльбраха</p> <p>3 ино колко было их товароу забавлѣно и положено въ цркѣви то все дано им</p> <p>3 а што на долъжниках было ино виноватыи сам къ своѣмоу истьцю шолъ и ему платилъ а пакъ</p>	<p>3 такъ же здесъ жаловалъ нам тот полочанинъ на има михалъко ѿнѣтонъчинъ на вашогъ ротъмаинна на гарьмана зоундира иж дѣи ѣмоу вѣликую щкоду и кривду оудѣлал а безправно</p> <p>7 про то бы ваша млсѣть томоу михатьку рачили справѣдливость оудѣлати подпоугъ вѣчного миру</p>

Controlled English

- CELT (Controlled English to Logic Translation)
- PENG (Processable English)
- Common Logic Controlled English
- Computer-Processable Language (CPL)
- Formalized English
- Attempto Controlled English (ACE)

Workshop on Controlled Natural Language,
Marettimo Island, Italy, September 13-15, 2010

Attempto Controlled English

- University of Zurich, Norbert Fuchs et al.
- ACE \Rightarrow DRS (Discourse Representation Structures) = the variant of FOL (First Order Logics) language
- DRS \Rightarrow OWL, RuleML, SWRL
- ACE Tools: parser, reasoner, editor, AceWiki, OWL verbalizer, etc.
- Users' vocabularies

Clauses from the Charter no.6 and their rendering into ACE

- And now I, metropolitan, say that those inhabitants of Vitebsk unjustly complained on Rigans.
- And now I know that Rigans are not guilty of that.
- The metropolitan says that the inhabitants of Vitebsk complain on the Rigans unjustly.
- He knows now that the Rigans are not guilty.

Capturing “facts about the text” in ACE

- The Charter_6 is written by the archbishop of Riga
- The Charter_6 probably refers to the Charter_4
- The Charter_6 mentions Helmich and Prince of Briansk

Thank you for attention