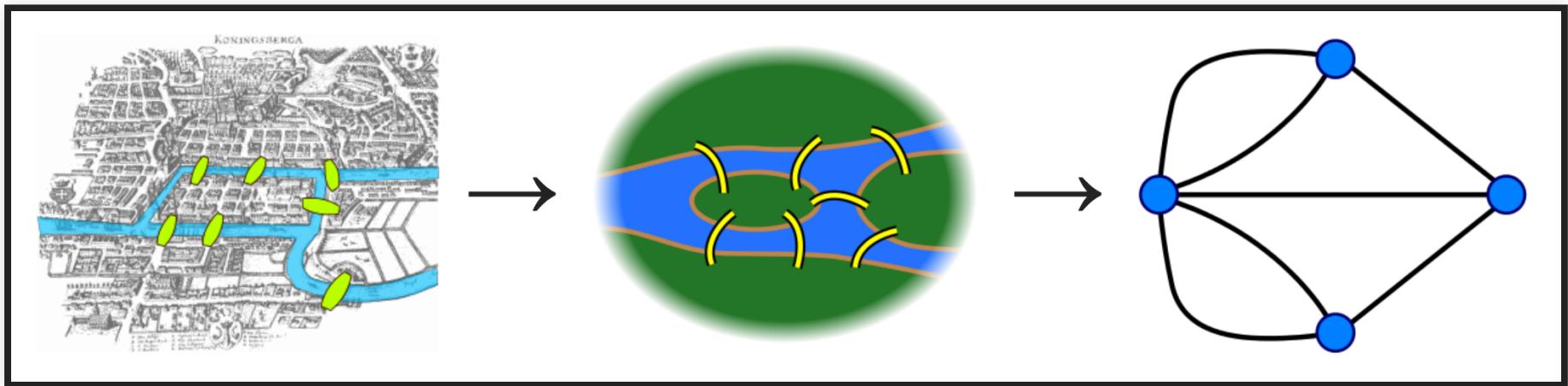


Applied Text as Graph (ATAG)

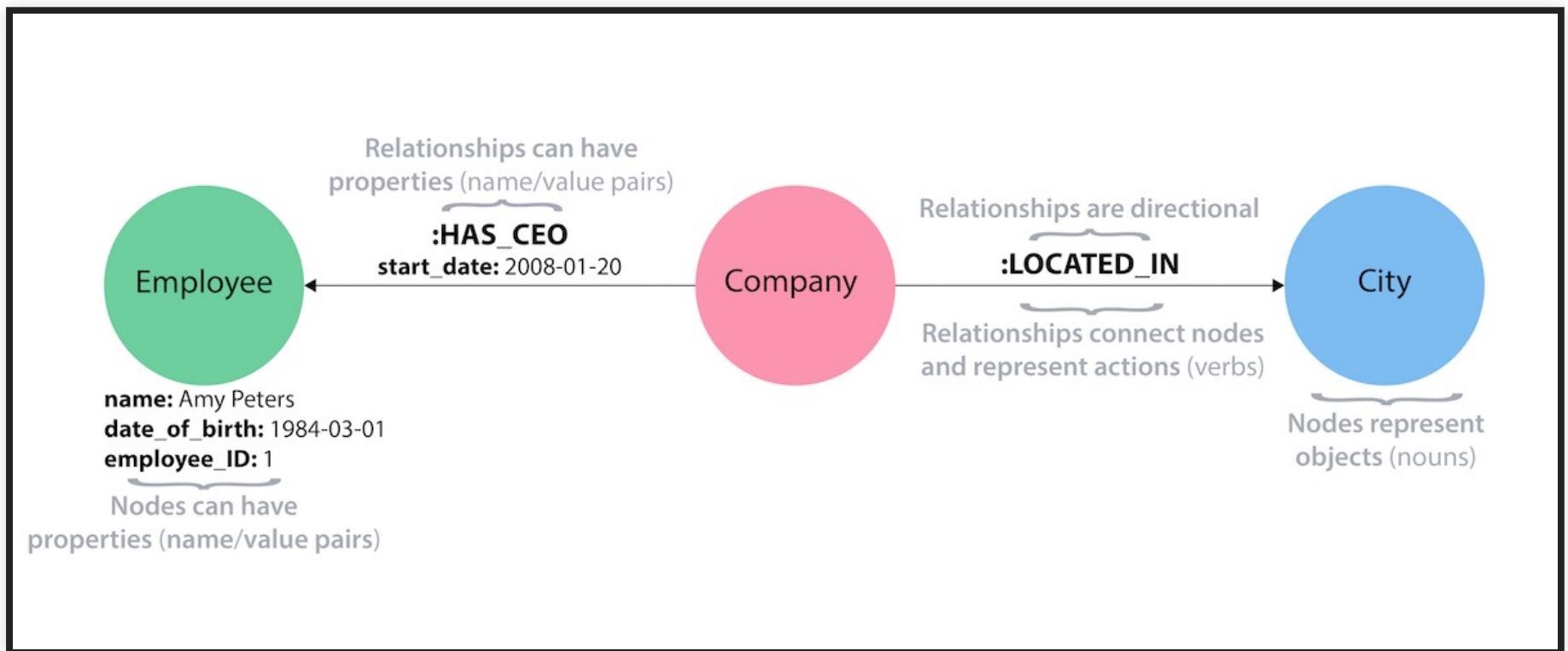
in Digital Scholarly Editions

Prof. Dr. Andreas Kuczera
University of Applied Science - Gießen

The Königsberg Bridge Problem



Labeled Property Graph



Outline

- About: The Socinian Letter exchange and Hildegards Liberepistolarum
- XML Edition Environment
- Standoff PrOerties (SPO)
- The concept of Applied Text as Graph (ATAG)

Example

- The Socinian Exchange of Letters
 - Transnational Protestant minority
 - Scholarly network
 - Discussions on religion, science, and politics
 - Socinianism was a precursor to the Enlightenment
 - ~1833 letters exchanged between 1580-1740
- The liberepistolarum of Hildegard of Bingen
 - 6 manuscripts with letters
 - with different tasks of the manuscripts
 - Until now 3 are transcribed

XML editing environment

- 'classical' XML workflow & components
- ediarum:
 - eXist-db
 - Oxygen
 - XQuery ...
- TEI and DTA-Bf
- reasoning:
 - technology was available at start of project, work on edition started in parallel to technological innovation
 - GUI-based environment usable without XML training

Example Letter

- Ismaël Boulliau (Paris) to Stanisław Lubieniecki (Hamburg), 6. März 1665

non est. ^{Vnde} Reip. Legibus hanc congruam improbare ac ^{tamen} tamen illa Regis ^{re} Libertatem Poloniam intactam illesamque volunt, nec ^{etiam} ^{de successione} ^{merentur aut} ^{de} ^{oppositione} ^{aut extirpatione} ^{atque} ^{libertate} ^{Reipublicae} superstitio electione consilium ^{quidem} opinantur. Ejusmodi proposito Leges oportete sunt, hoc incipi videntur. At de ^{vniuersitati} ^{rigor nomine remittendus est, cum aliter ingruenti ruina regni} ^{juris summus} obuiam iste non licet. quin Poloniae Orbis maxima subituras sit pericula, cladesque magnas passurus Rege orbo ^{successore} non designato, turbatis confusisque rebus, fatus concedente, nemo perspicax sagaxque futuri ^{nemo} est, qui dubitare queat. ^{re} ^{regni candidatus vel socius esse} ^{in solens} ^{videri non debet. negre} ^{teum Gallos vero ex aliis conspectuorum inmixtos} ^{lur labefactari.} ^{Lege} ^{abstegari, aut illa} ^{fidiudem fieri querunt. Repente Polonia absque Polonorum concordia confusa fieri non posse norunt, neque in id etiam incautant, ut vi vel ^{dolis} ^{fratre} Regie stirpis Franciae Princeps solum illud occupet, maxima commoda incrementa ab ejusmodi Principe obtentura ^{est} ^{ad eam} ^{Galli ostendendo partes pro} Reip. Polonica ^{opinque} ^{ab} agent est operam rego otalem fore, arcam Gallicam potestate cum Polonica coniunctionem hunc vulnus profuturam ostendendo Galli partes suas acturi sunt; an audiendi an repellendi possit Nobilis Polonica decinet. Argitudinibus viri Politici tractavint, et ^{in tanto partium ardore} gaudi sunt.}

The Example Letter

- in [json](#) for SPO
- in [Neo4j](#)

```
MATCH (n:Text {url:'https://sozinianer.mni.thm.de/id/ed_kbj_wfw_'
-[ :HAS_ANNOTATION ]->(s:Spo)
<-[ :COMMENT_ON ]-(c:Text)
-[ :HAS_ANNOTATION ]->(a:Spo)
return *;
```

Speedy as an editor for SPO

The screenshot shows the Speedy editor interface with various toolbars at the top and a main editing area below.

Annotations: Includes icons for person, book, clock, calendar, lightbulb, file, magnifying glass, and a dropdown menu.

TEI: A dropdown menu set to "tei/core/date" with an "Apply" button and a checked "Expansions" checkbox.

Animations: Includes icons for download, asterisk, double bars, rect, emoji face, flip, invert, circle, pulse, peek, image, and film.

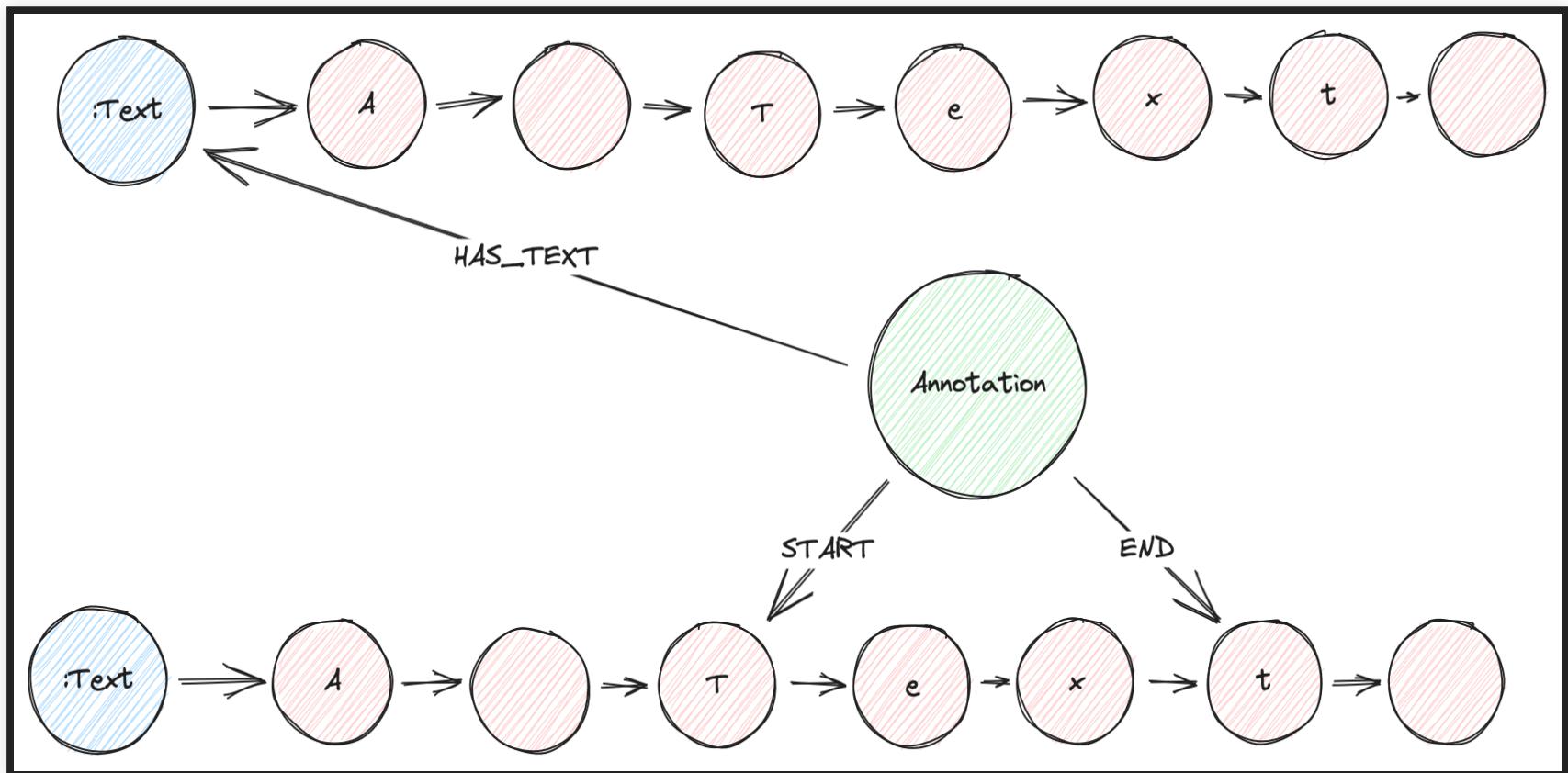
Text Content:

Friedrich III. - [RI XIII] H. 19 n. 316

1452 Dezember 20, Wiener Neustadt

K. F. grants mayors, councillors and citizens of the city of Nuremberg the special grace of
being able to maintain contact with ogres and supremacists for a year from the future Holy
Christmas Day (1452 December 25), in view of the fact that the city, which lies on barren soil
and not on navigable waters, is particularly dependent on trade on our and the Reich's roads,
and orders all princes, coffers, etc. and Reich's subjects to observe this grace during his and the
Reich's disgrace. Original date: An sannd Thomas abend des heiligen zwelfboten.

The Idea of ATAG (Applied Text as Graph)

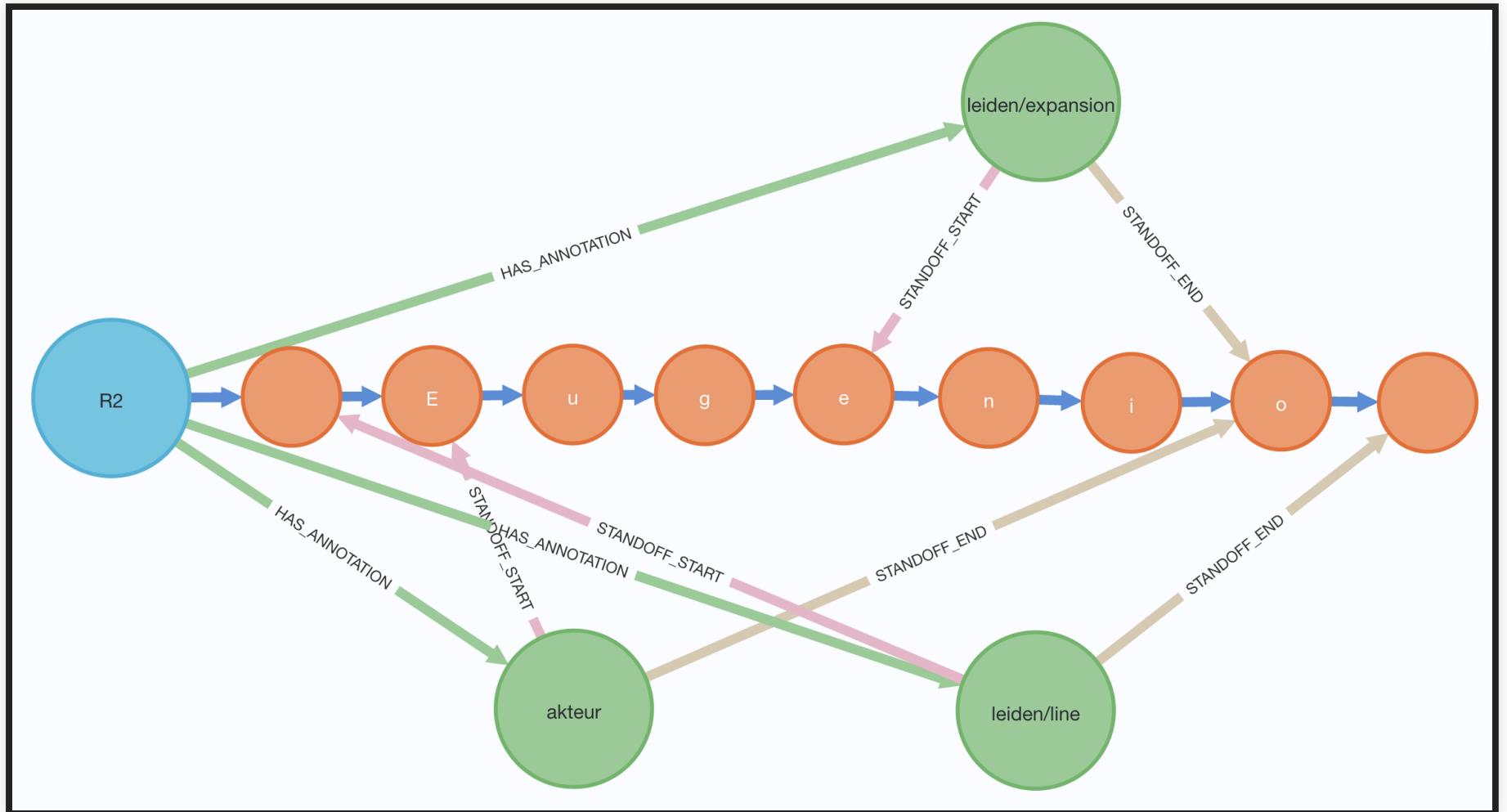


The Idea of ATAG (Applied Text as Graph)

- There are pieces of linear text
- Every character in this linear text is in a character node (orange) which is connected to the previous or following character node
- Every piece of text can be connected to previous and following pieces of text (in the sense of a proposed reading order)
- Every piece of text starts with a text node
- The granularity is on the character level
- Every character is addressable by a UUID
- These pieces of text can be annotated by annotations nodes (green)
- These annotation nodes can have a connection to another text node with a characterchain (which can be annotated ...)

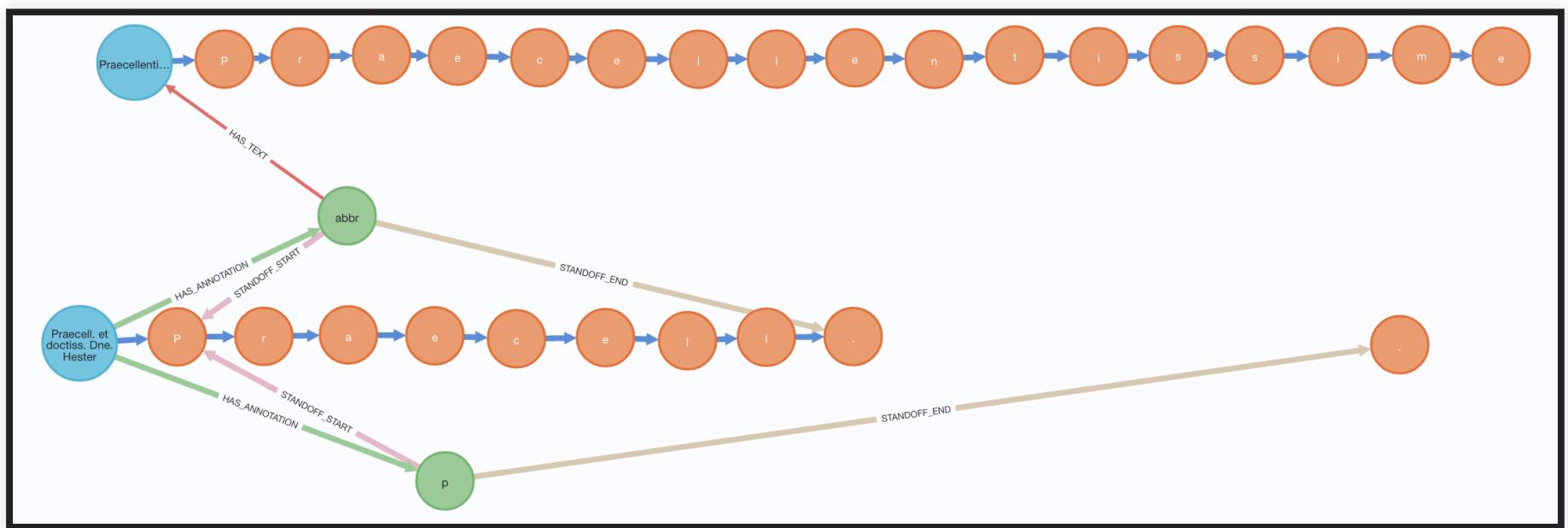
ATAG (Applied Text as Graph)

The idea in the Hildegard letter R2 in a graph



- The text is the normalized version, the abbreviation is in the annotation
- It's possible to change the base text dynamically if needed

The idea in a Socinian letter



- The text is the original version, the expansion is in the annotation.

Summary

- ATAG is a way to model text and annotations
- It bases on
 - textnode
 - chain of character nodes
 - annotations which could be connected with another textnode
- ATAG needs a base character chain (textstream) but makes no rules what this chain should contain
- This base chain can be changed dynamically
- ATAG can handle a nearly unlimited number of parallel and overlapping annotations like Standoff Systems
- The base character chain can be edited when annotated
- Future Work:
 - Apply TEI
 - Webbased editor
 - Generic publication system
- <https://git.thm.de/aksz15/atag>

The Königsberg Bridge Problem

