

CRMaaa: An (unofficial) CIDOC Extension for the World of Social Facts

CIDOC CRM SIG

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swissuniversities

Acknowledgements

Origin of the Project:

- Development of CRMcpr in 2020 (initiated and funded by **Swiss Art Research Infrastructure**, University of Zurich in cooperation with **ETH Zurich**)
- Development of CRMaaa in 2022 (initiated and funded by **ETH Zürich**, Prof. Maarten Delbeke)

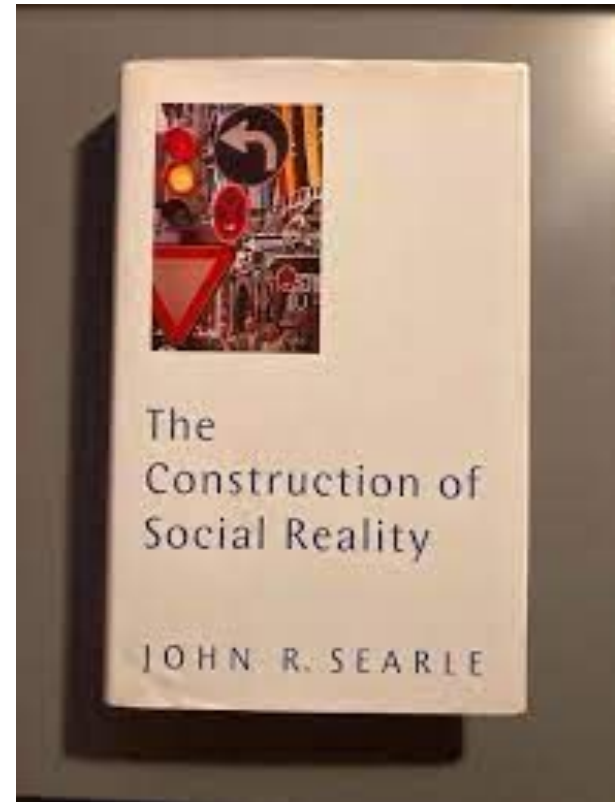
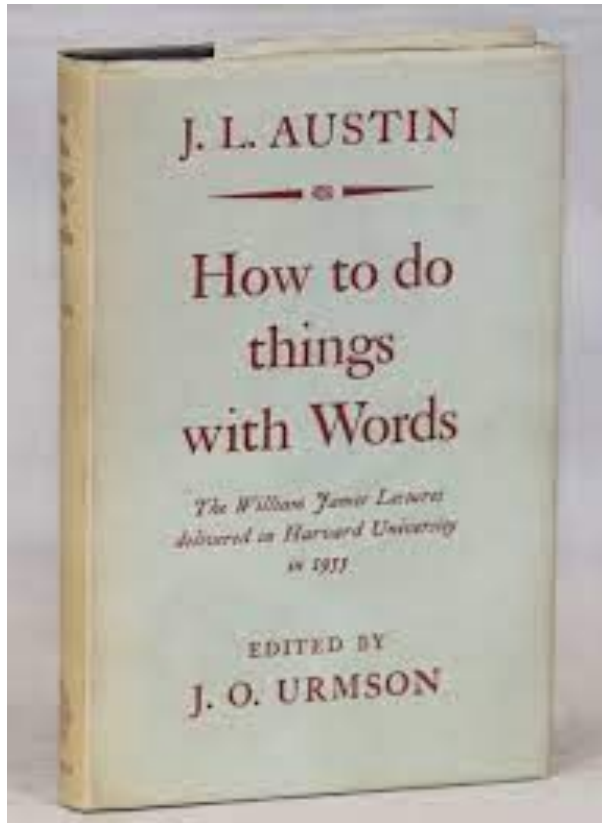
Current Institutional Framework

- Further Developing as part of the **Open Research Data for the Art Environment (ORDEA)** project
- CRMaaa and CRMcpr as Integrated “twin project” with SDRM 2.0 and Zellij (ontology and semantic pattern management system)
 - SDRM 2.0 updates the previous version of SDRM and aligns it with Linked.Art
 - SDRM 2.0 is ready for publication in early summer, first release of Zellij is due in summer.
- Developed by **Takin.solution** on behalf of **SARI**

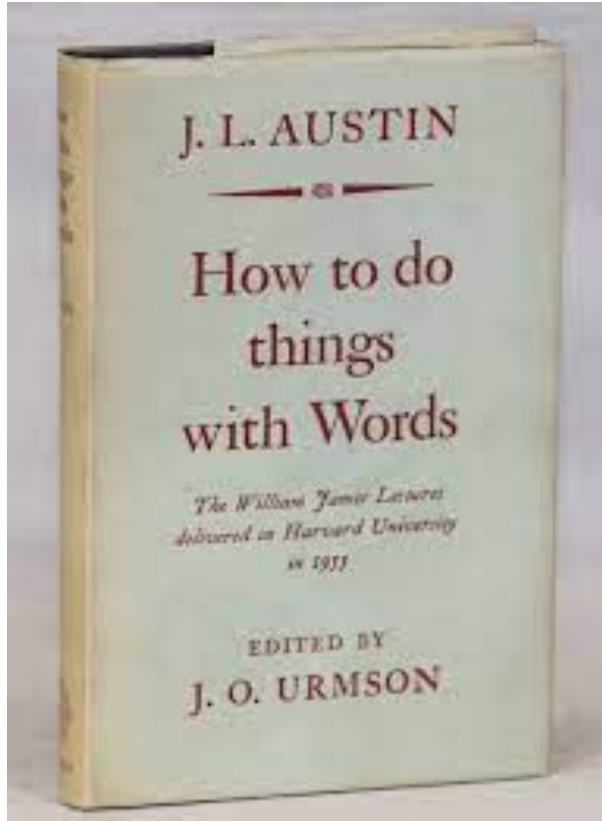
Action Relations for SIG

- Would like an official recognition as ‘logically CRM compatible’ and reference on the site [in a section for CRM compatible extensions]
- Contributes full modelling and examples for consistently representing social facts as they appear in CIDOC CRM... open to have that modelling adopted into CRMsoc
- Happy to collaborate with other projects working in the same space to align fundamental ideas under ‘CRMsoc’ as umbrella. If so, CRMsoc should rebooted with this explicitly in mind
- If there is not an interest in continuing CRMsoc as a formal extension that takes input from the community of users, it should be removed from the site: it is not a standard.

What Are *Social Facts*?



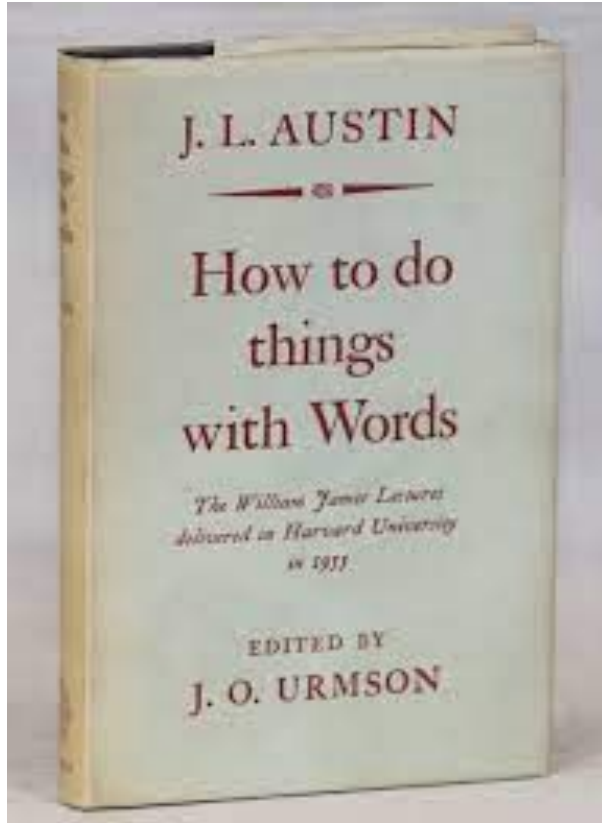
What Are *Social Facts*?



“...in recent years, many things which would once have been accepted without question as ‘statements’ by both philosophers and grammarians have been scrutinized with new care... It has come to be commonly held that many utterances which look like statements are either not intended at all, or only intended in part, to record or impart straightforward information about the facts.”

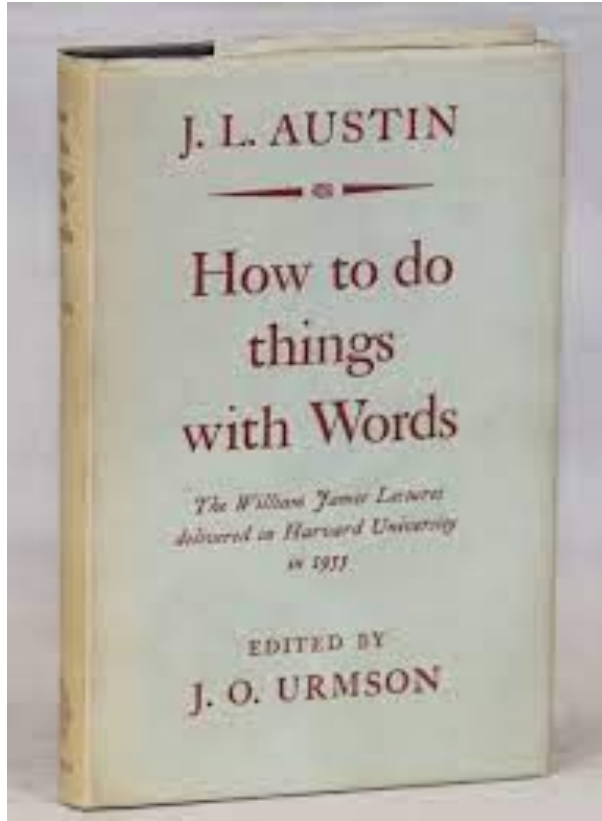
(1962, p. 1)

What Are *Social Facts*?



- Not all meaningful language is truth-functional (contra the Logical Positivists)
- There are, e.g., also *performative utterances* or *speech acts*

What Are *Social Facts*?

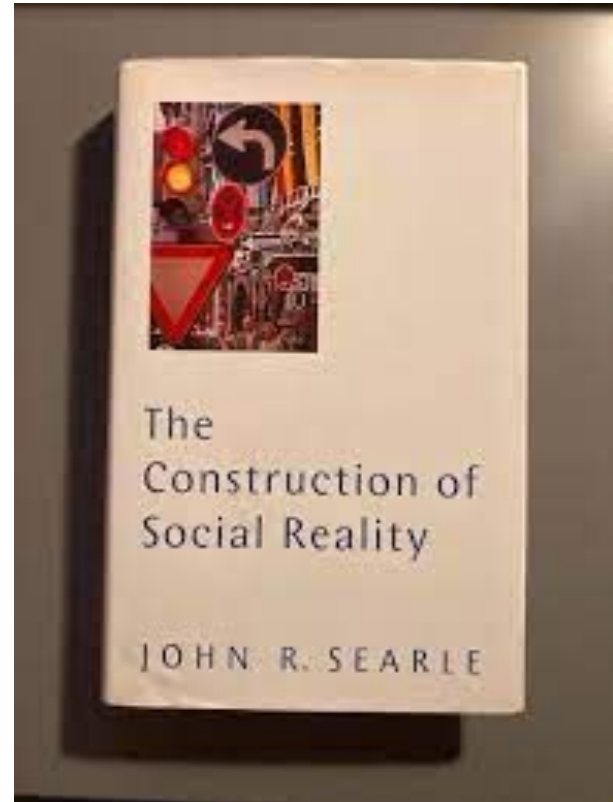


- “I hereby pronounce you husband and wife”
- “I quit!”
- “I promise to pay you \$10 tomorrow”

What Are *Social Facts*?

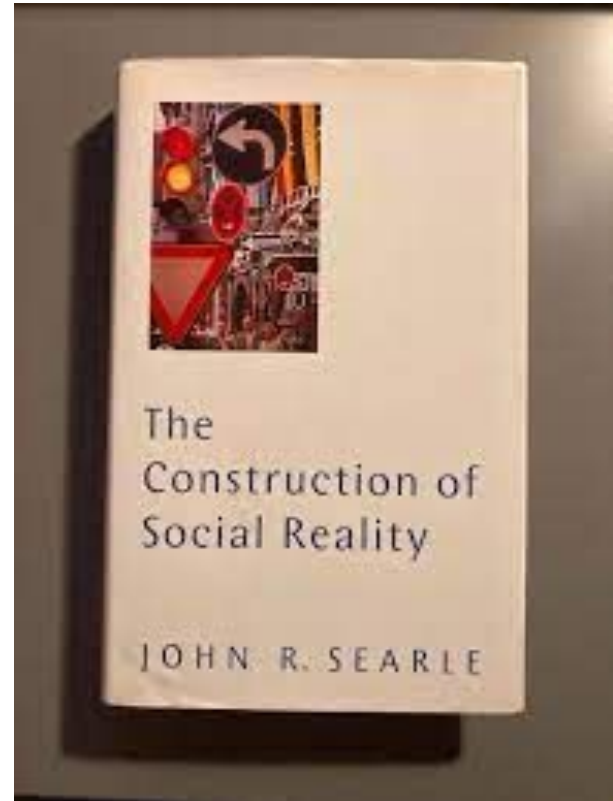
“We live in exactly one world, not two or three or seventeen. As far as we currently know, the most fundamental features of that world are as described by physics, chemistry, and the other natural sciences... How can there be an objective world that consists of money, property, marriage, governments, elections, football games, cocktail parties and law courts in a world that consists entirely of physical particles in fields of force?”

(1995, p. xi)



What Are *Social Facts*?

- Take *X* as *Y* in *C*
 - Ontological *Subjective* (i.e., they supervene on subjectivity)
 - Epistemologically *Objective* (i.e, open to investigation and falsification)



CRMaaa Motivation

- True to the Facts
 - Marriages exist, adoption exists, debt exists, intellectual property rights exist...
 - Open to *verification* and *falsification*
- True to the way we speak about these facts
 - We can say true things about them... and we do!
 - They are, however, multivalent - more on this!

CRMaaa Motivation

Historical Information is typically partial, we don't always know the 'events' of history, we know their effects [social facts]

Historical research is interested in the social context and consequence of historical events but CRMbase is optimized for recording a presentist view of history [the present state of knowledge]

Historical research is interested in knowing contradictory facts and their social contexts as well as social cause (in their social aspect on top of their space-time aspect)

Historical method requires a means of determining provenance of facts

CRMaaa Motivation

- As ontologists/semantic modellers, this presents us with a number of technical challenges...
- Principal among these is the *temporalization* and *categorization* of properties
- Some ways to deal with this:
 - Temporally-specified properties

CRMaaa Motivation

Temporally Exclusive Properties in CIDOC	Temporally Inclusive Properties in CIDOC
<ul style="list-style-type: none">- P50 has current keeper- P52 has current owner- P55 has current location- P54 has current permanent location	<ul style="list-style-type: none">- P49 has former or current keeper- P51 has former or current owner- P53 has former or current location- P74 has current or former residence- P107 has current or former member- P109 has current or former curator

CRMaaa Motivation

Temporally Exclusive Properties in CIDOC

- **P50 has current keeper**
- **P52 has current owner**
- **P55 has current location**
- **P54 has current permanent location**

Temporally Inclusive Properties in CIDOC

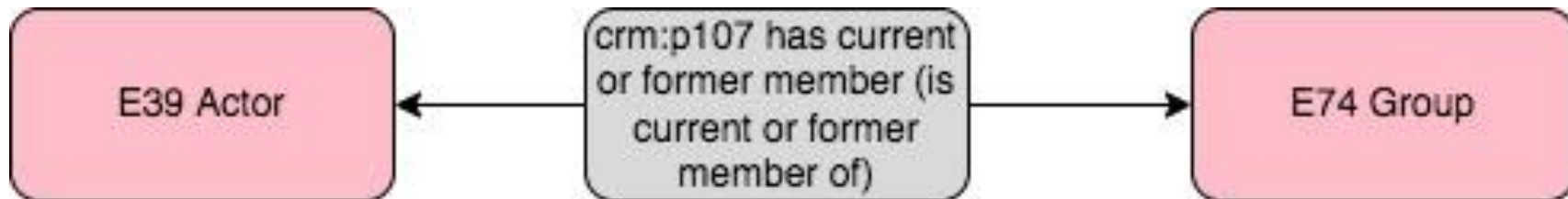
- **P49 has former or current keeper**
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- **P107 has current or former member**
- **P109 has current or former curator**

CRMaaa Motivation

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P107 has current or former member (is current or former member of) in version 7.1.1

Domain: [E74 Group](#)

Range: [E39 Actor](#)

Subproperty of: No subproperties found

Superproperty of: No superproperties found

Quantification:

many to many (0,n,0,n)

Scope Note:

This property associates an instance of [E74 Group](#) with an instance of [E39 Actor](#) that is or has been a member thereof.

Instances of [E74 Group](#) and [E21 Person](#), may all be members of instances of [E74 Group](#). An instance of [E74 Group](#) may be founded initially without any member.

This property is a shortcut of the more fully developed path from [E74 Group](#), *P144i gained member by*, [E85 Joining](#), *P143 joined to* [E39 Actor](#).

The property [P107.1 kind of member](#) can be used to specify the type of membership or the role the member has in the group.

Examples:

- Moholy-Nagy ([E21](#)) *is current or former member of* Bauhaus ([E74](#)). (Moholy-Nagy, 2012)
- National Museum of Science and Industry ([E74](#)) *has current or former member* The National Railway Museum ([E74](#)). (Rolt, 1971)
- The married couple Queen Elisabeth and Prince Phillip ([E74](#)) *has current or former member* Prince Phillip ([E21](#)) *kind of member* husband ([E55](#)). (Brandreth, 2004)

In First Order Logic:

$P107(x,y) \Rightarrow E74(x), P107(x,y) \Rightarrow E39(y), P107(x,y,z) \Rightarrow [P107(x,y) \wedge E55(z)], P107(x,y) \Leftarrow (\exists z) [E85(z) \wedge P144i(x,z) \wedge P143(z,y)]$

Properties:

[P107.1 kind of member](#): [E55 Type](#)

P107 has current or former member (is current or former member of) in version 7.1.1

Domain: E74 Group

Range: E39 Actor

Subproperty of: No subproperties found

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Properties:

P107.1 kind of member: E55 Type

P107 has current or former member (is current or former member of) in version 7.1.1

Domain: E74 Group

Range: E39 Actor

Subproperty of: No subproperties found

Superproperty of: No superproperties found

Quantification:

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Scope Note:

This property associates an instance of E74 Group with an instance of E39 Actor that is or has been a member thereof.

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Properties:

P107.1 kind of member: E55 Type

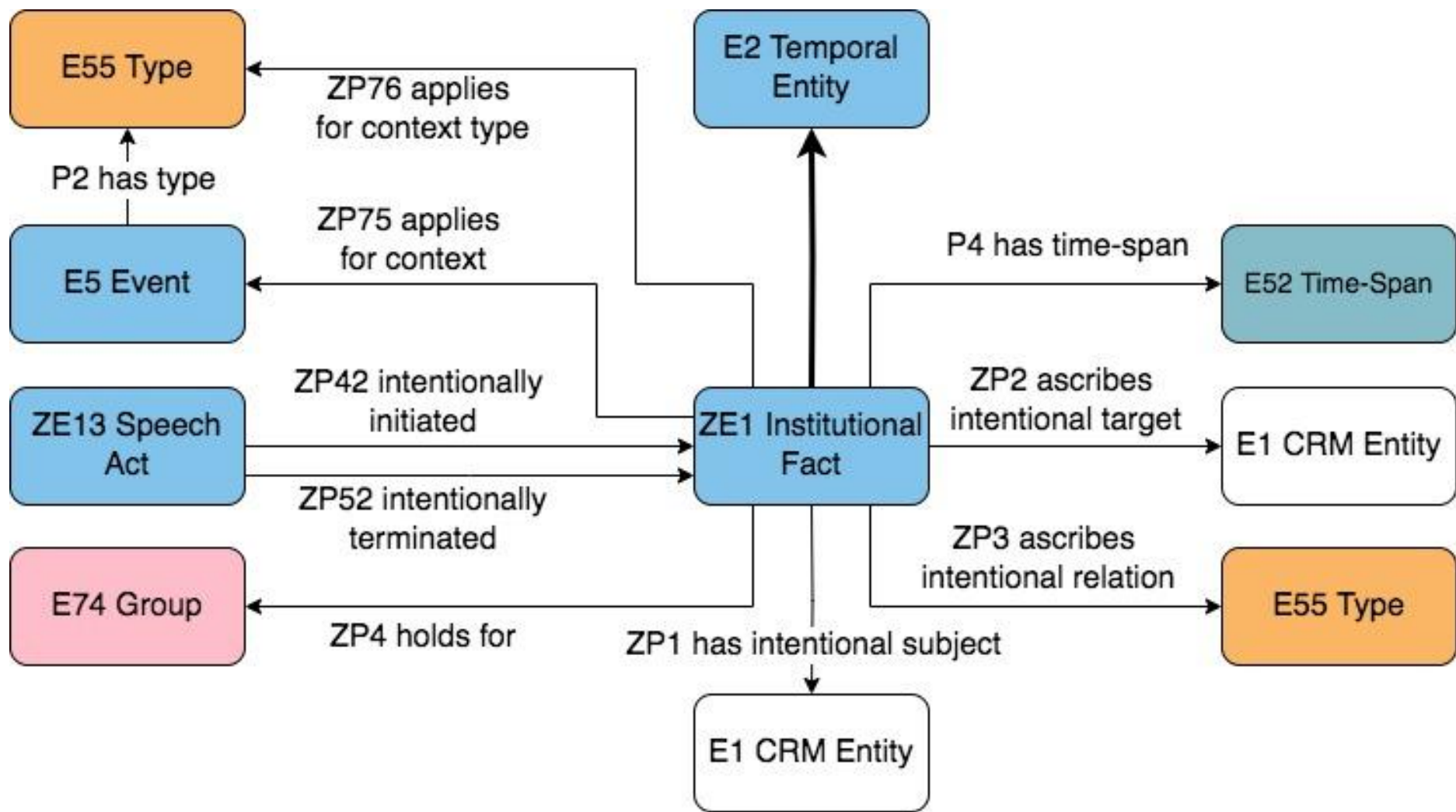
CRMaaa Motivation

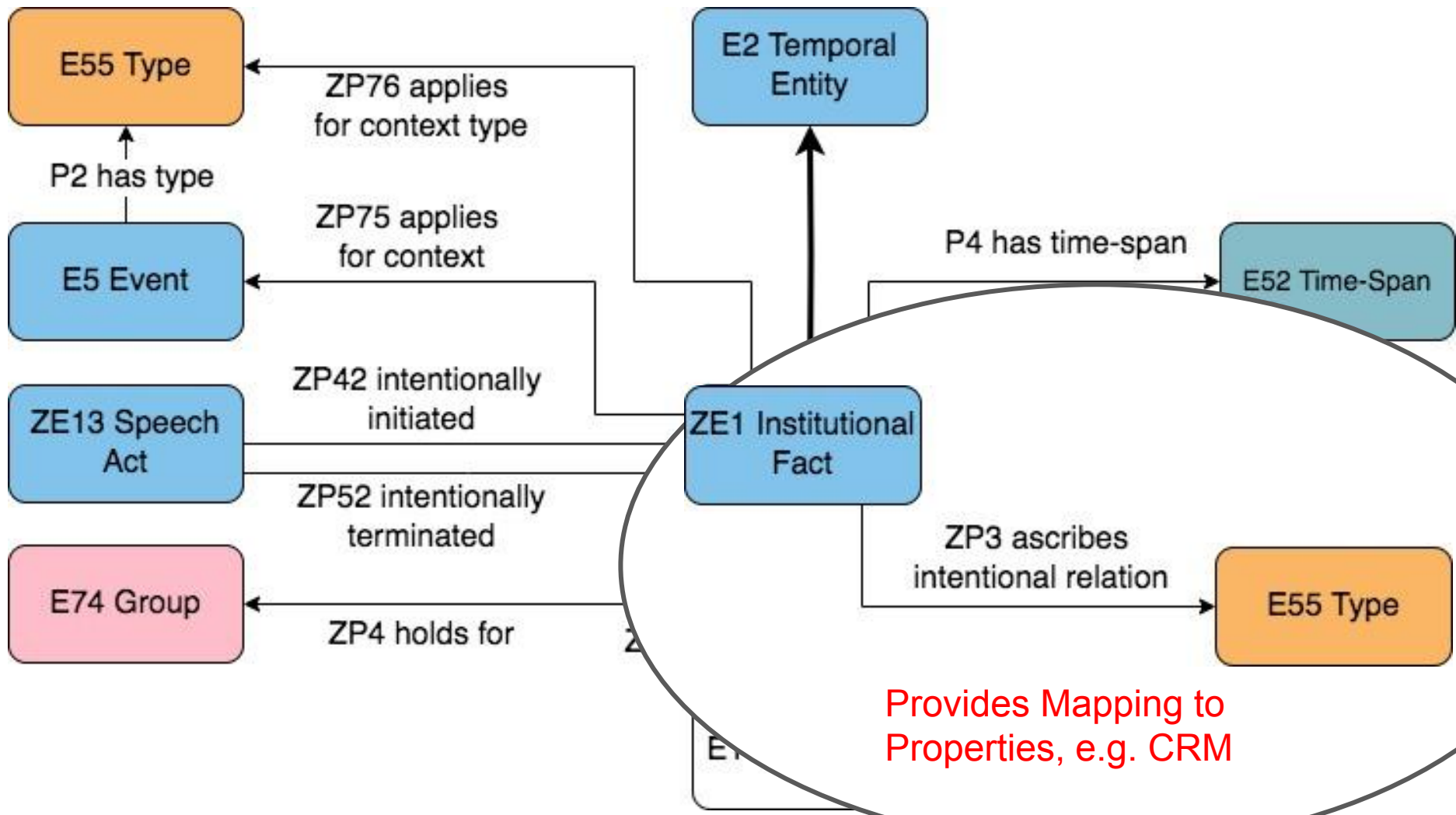
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 - RDF*

CRMaaa Motivation

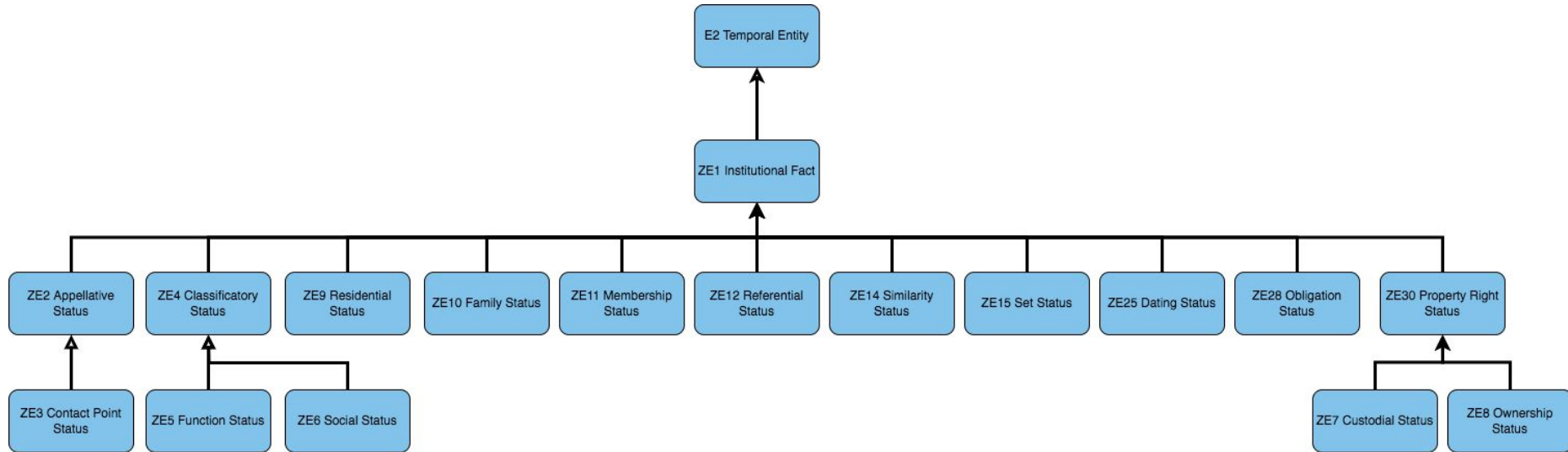
- Principal among these is the *temporalization* and *categorization* of properties
- Some ways to deal with this:
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 - RDF*
- Best to avoid all of these, if possible

Basic CRMaaa Structure: Institutional Facts





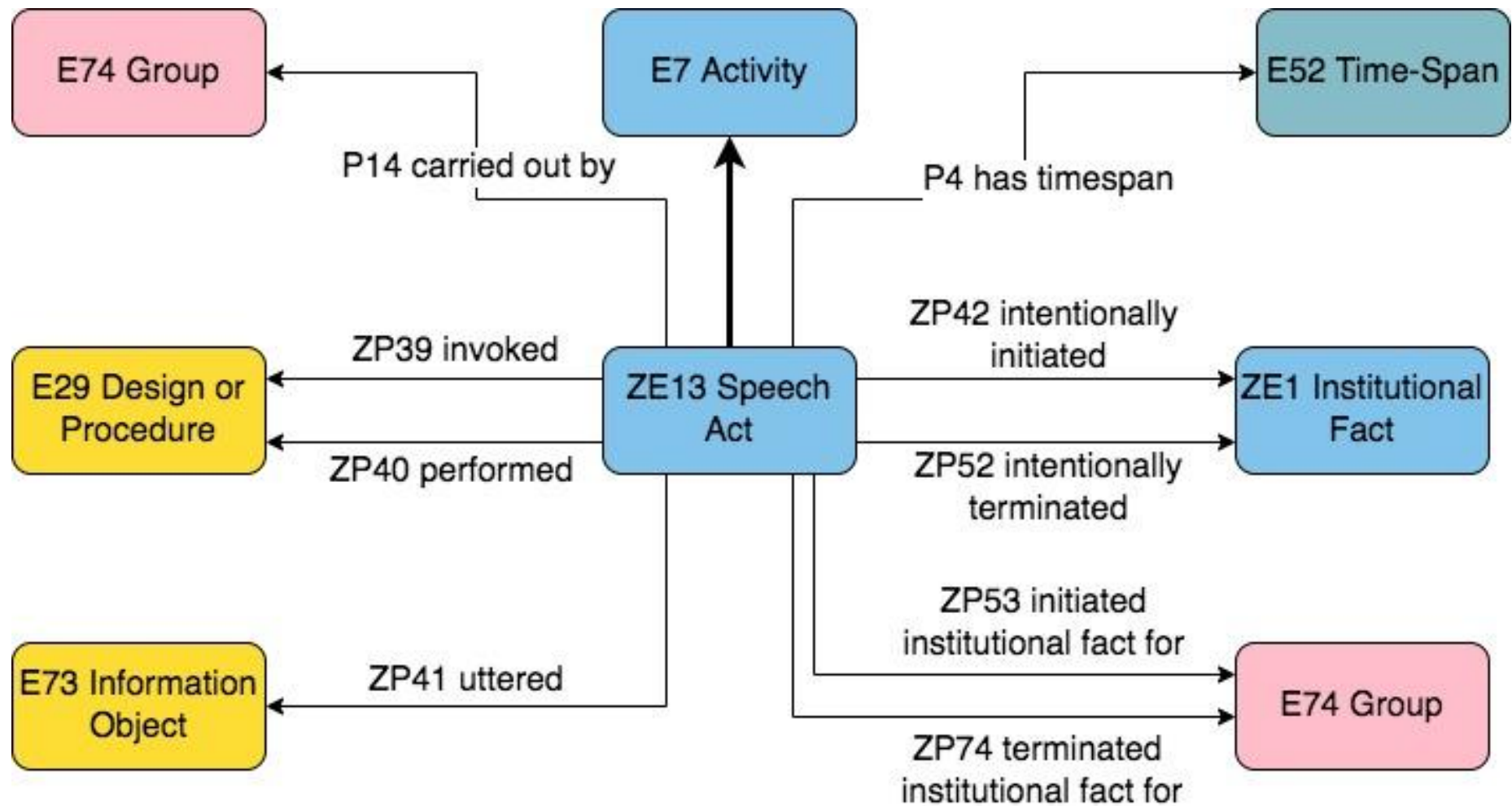
CRMaaa ZE1 Institutional Fact Hierarchy



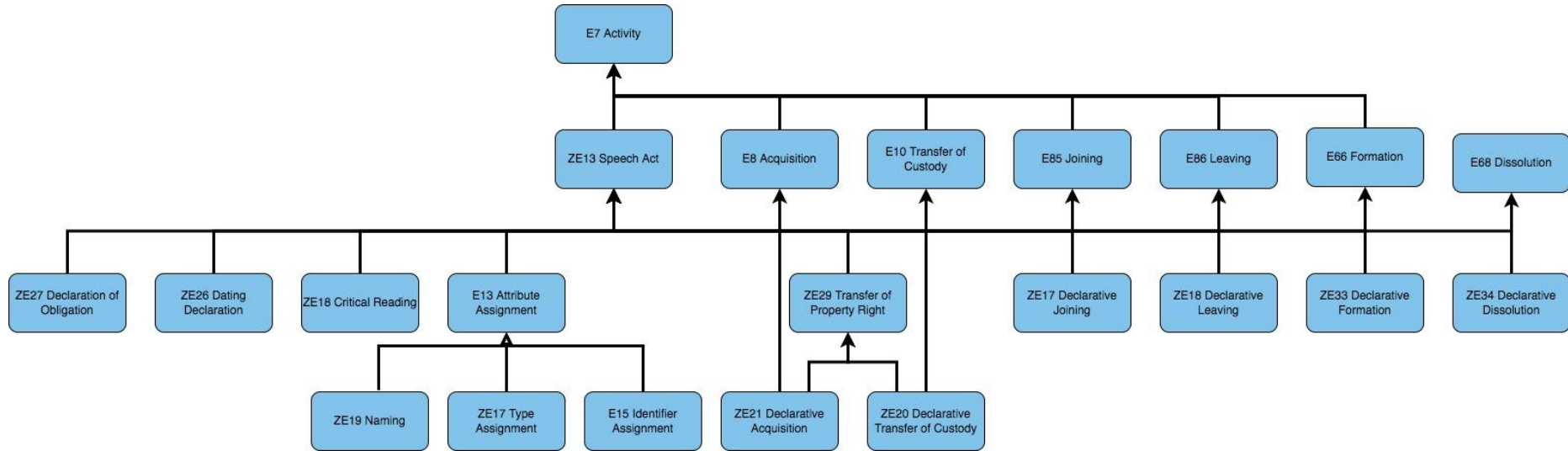
CRMaaa Hierarchy: Institutional Fact

- ZE2 Appellative Status
- ZE3 Contact Point Status
- ZE4 Classificatory Status
- ZE5 Function Status
- ZE6 Social Status
- ZE9 Residential Status
- ZE10 Family Status
- ZE11 Membership Status
- ZE12 Referential Status
- ZE14 Similarity Status
- ZE15 Set Status
- ZE25 Dating Status
- ZE28 Obligation Status
- ZE30 Property Right Status
- ZE7 Custodial Status
- ZE8 Ownership Status

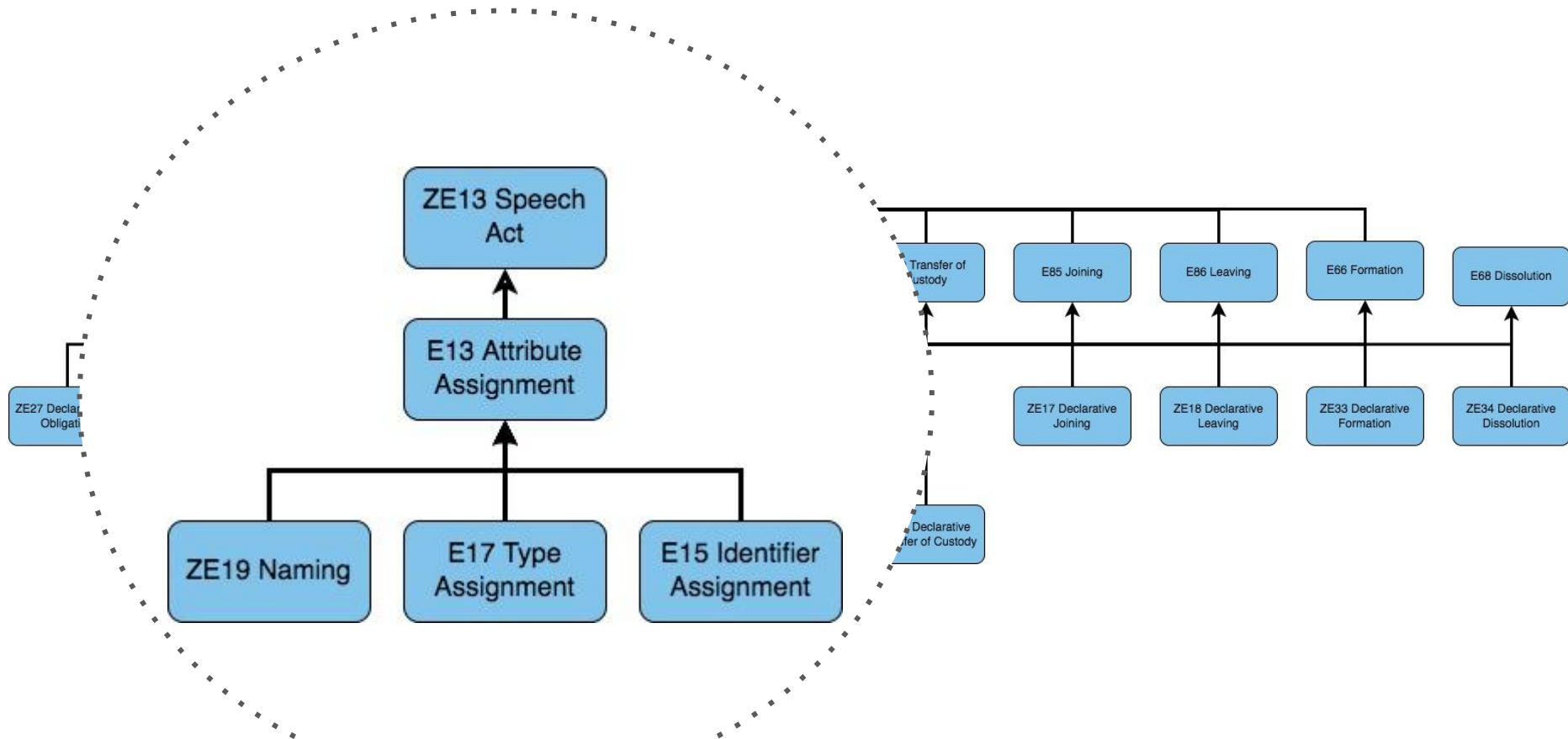
Basic CRMaaa Structure: Speech Act



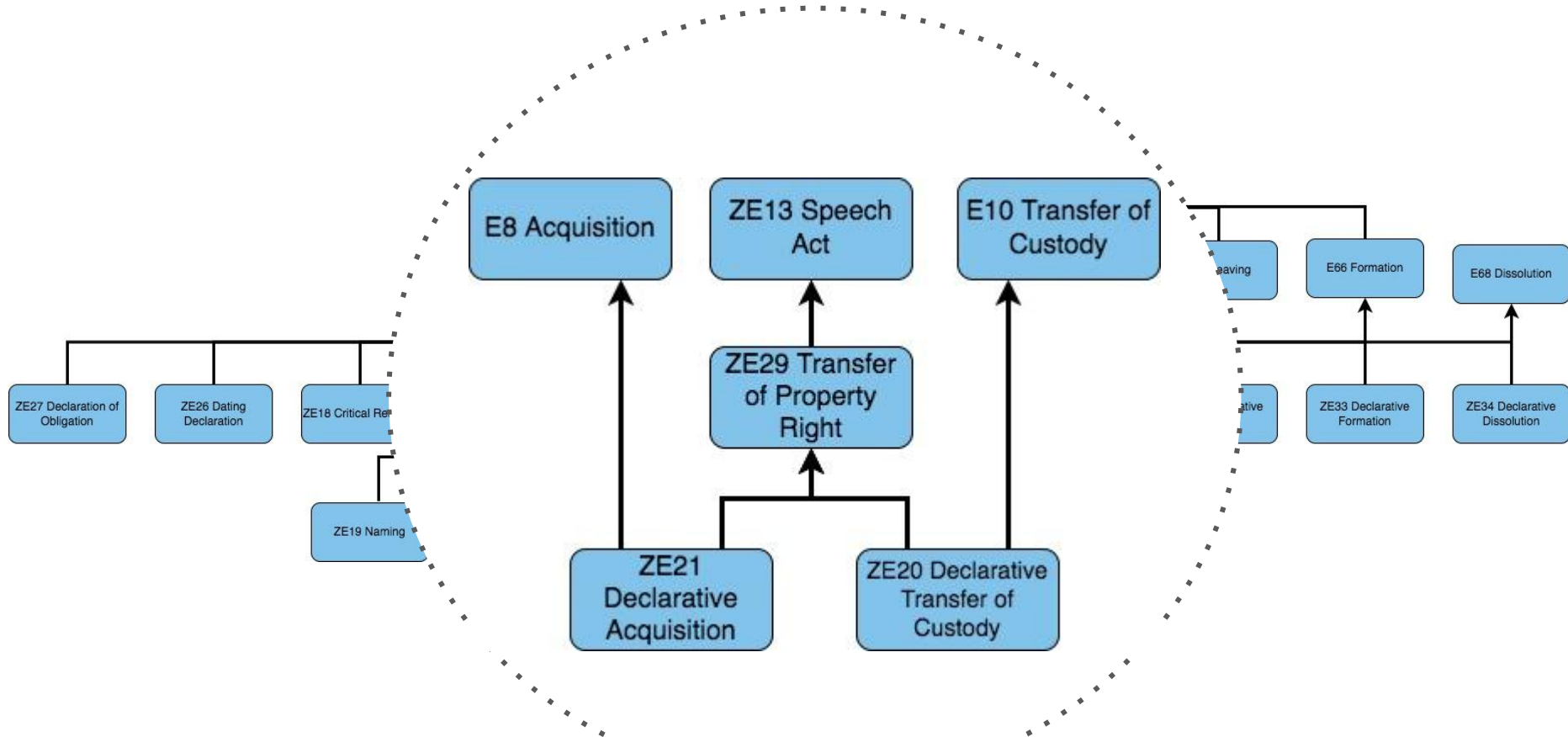
CRMaaa ZE13 Speech Act Hierarchy



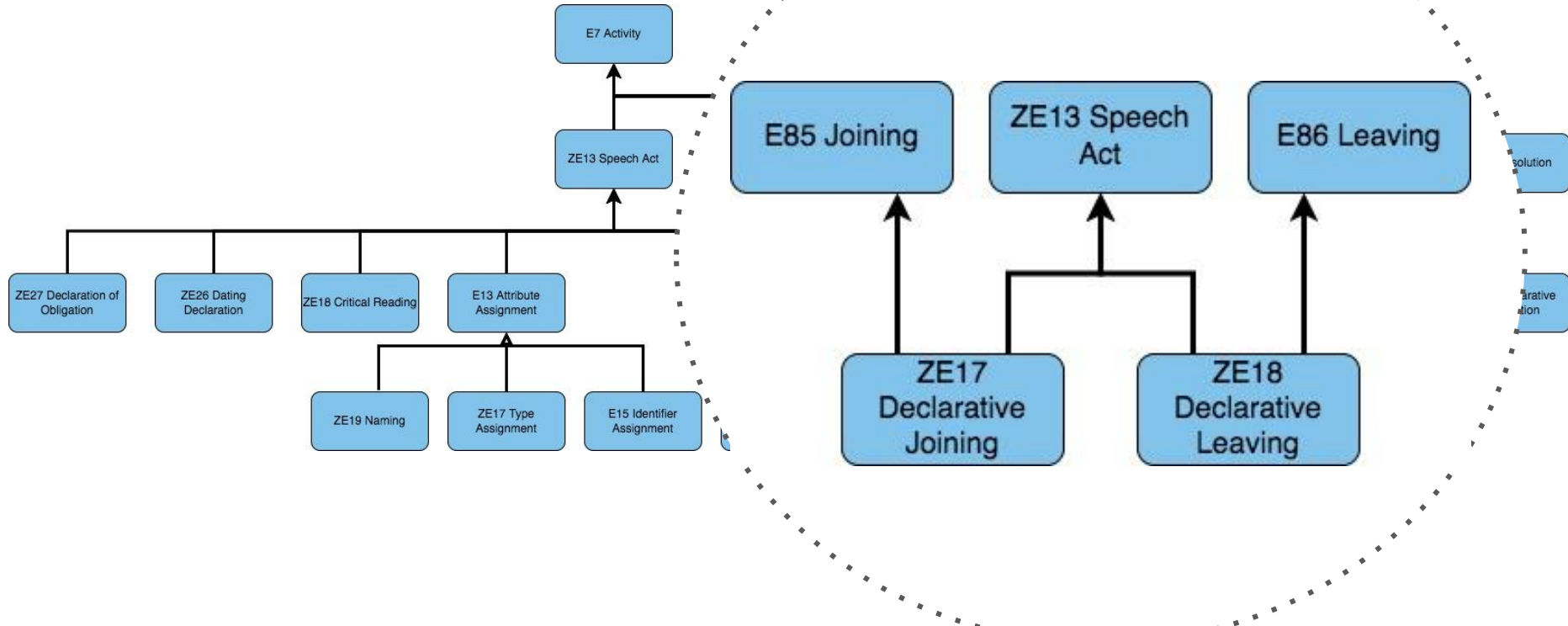
CRMaaa ZE13 Speech Act Hierarchy



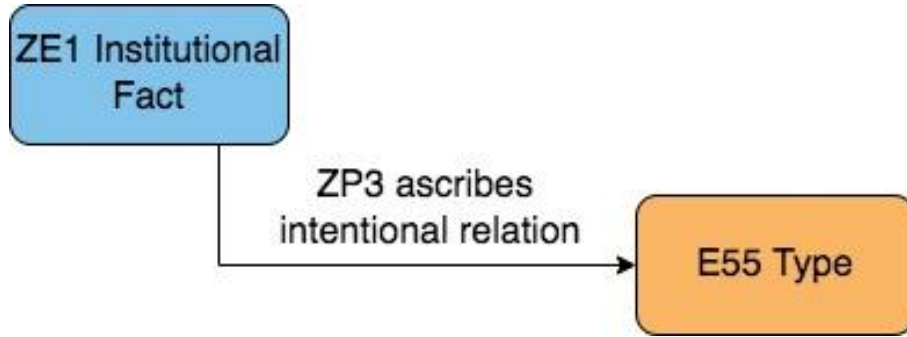
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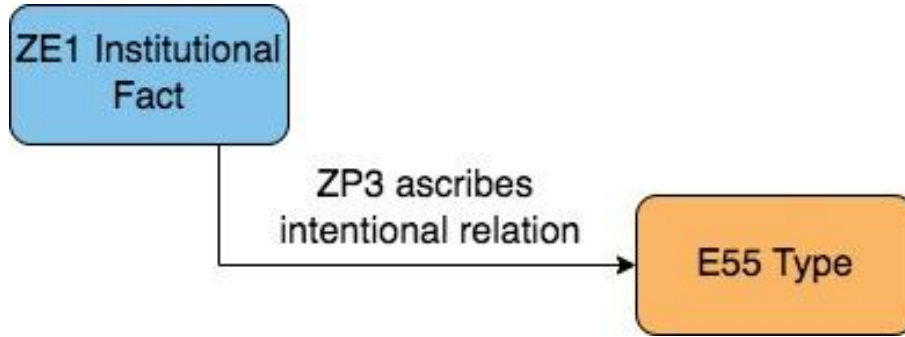


Social Facts in CIDOC CRM Core



- 25 CRM properties identified in our first analysis
- 20 incorporated so far into v1.5
 - Across 8 Institutional Fact “Status Types”

Social Facts in CIDOC CRM Core

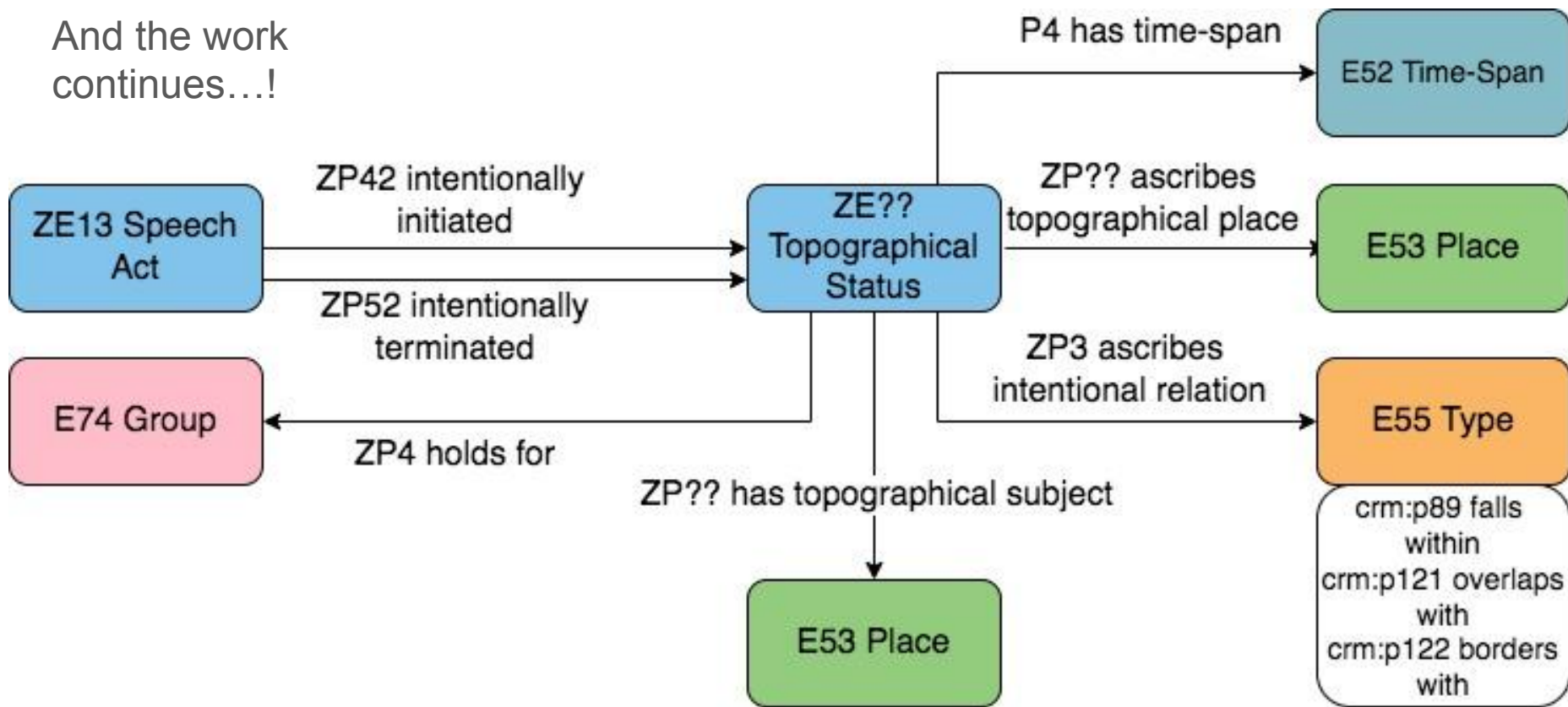


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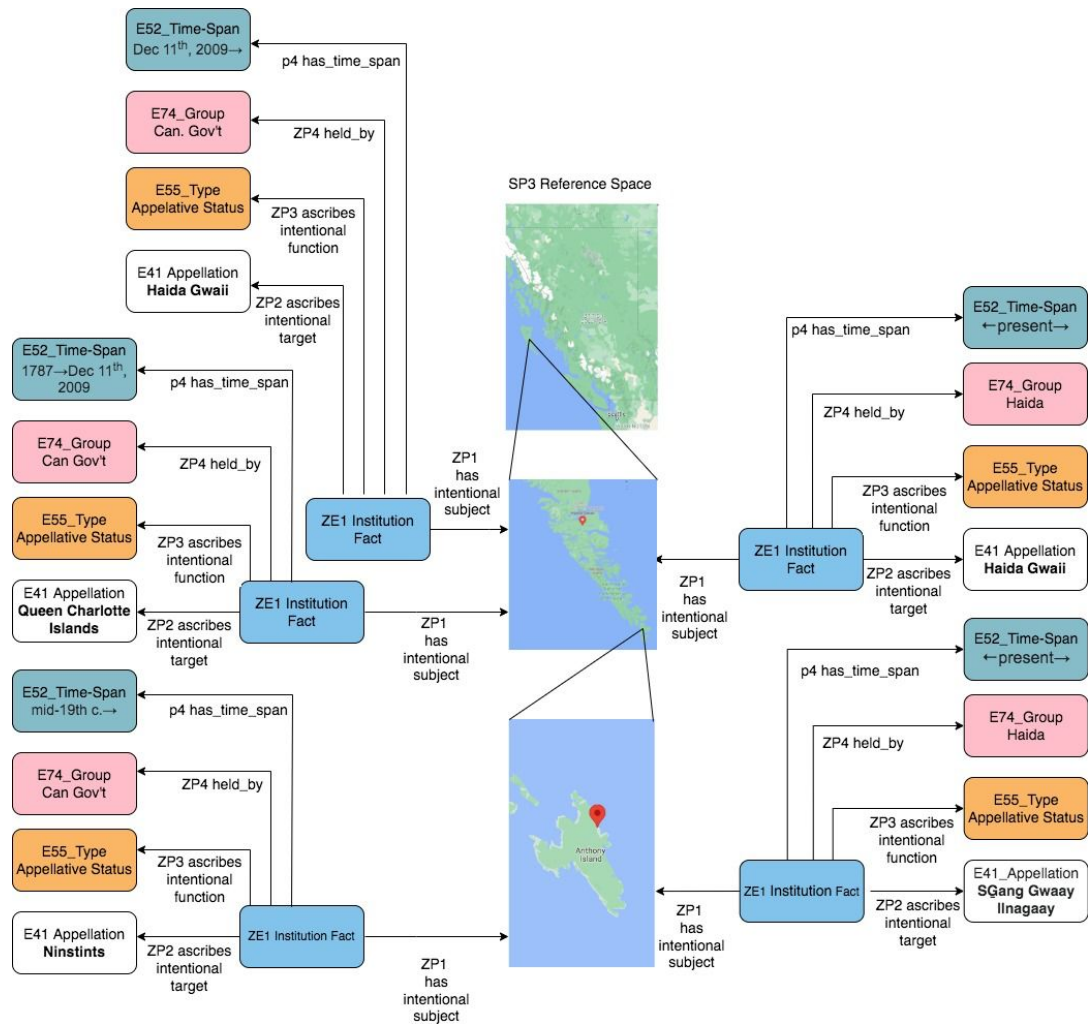
- P1 is identified by (Appellative Status)
- P2 has type (Classificatory Status)
- P152 has parent (Family Status)
- P107 has current/former member (Membership Status)
- P52 has current/former owner (Ownership Status)
- P74 has current/former residence (Residential Status)

Social Facts in CIDOC CRM Core

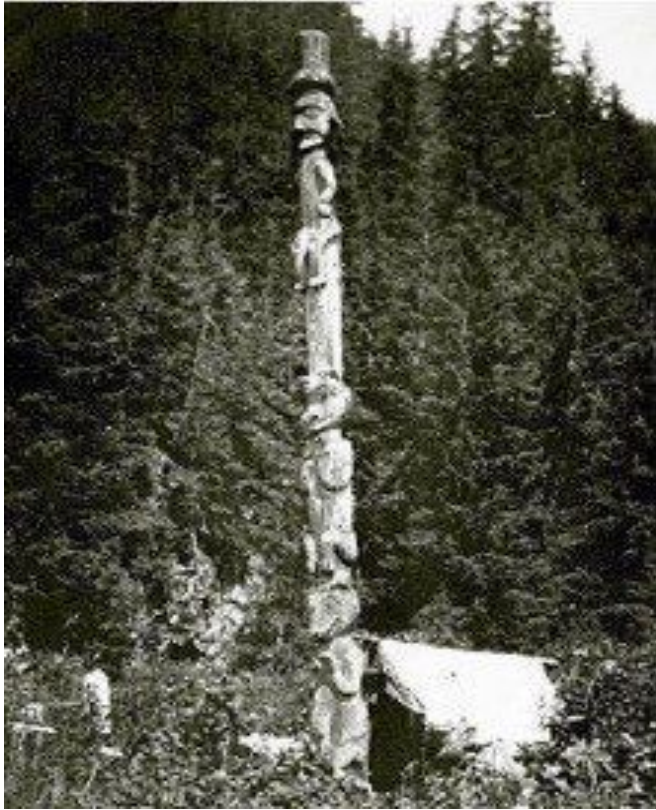
And the work continues...!



Some Examples



Repatriation of the the G'psgolox pole

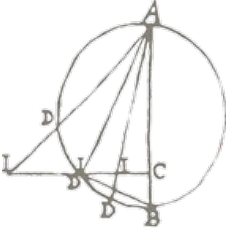


The G'psgolox Totem Pole in Kitimaat, 1921.
Source: British Columbia Archives, 2007.



The replica of the G'psgolox pole in the Swedish Museum of Ethnography, Stockholm, 2006.

Some Projects

Past Partners		Focus
	<p>Canadian Heritage Information Network</p>	<p>Mapping Indigenous Canadian Place Names</p>
	<p>German Historical Institute Rome</p>	<p>Medieval Merchant Trade Documentation</p>
	<p>Max Planck Institute for the History of Science</p>	<p>History of the Max Planck Society</p>
	<p>Swiss Art Research Infrastructure</p>	<p>SRDM 1.0 -> SRDM 2.0</p>

Some Resources

Tools/Resources

Task	Tool	Link
Ontological Modelling	OntoMe	https://ontome.net/project/69
Distribution and Materials	GitHub	https://github.com/takinsolutions/crmaaa
Issues Management	GitHub	https://github.com/takinsolutions/crmaaa/issues
Pattern Documentation	Zellij	Coming Soon
Long Term Archiving	Zenodo	Planned
Evangelization	Applied Ontology	Coming Soon!

Principles

- Open-Source
- Public
- Declarative
- Collaborative

See the project evolve and participate at [OntoMe!](#)

Download usable specification and rdf documents at [Github!](#)

Understand ontology deployment in patterns through [Zellij!](#)

Some Questions?

Matthew Fielding, Takin.solutions

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