

XDI Graph Patterns

OASIS XDI TC Submission
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This document contains illustrations of eight basic XDI graph patterns:

1. **Root context nodes and synonyms:** properties used to assert multiple addresses for the same node in the graph.
2. **Simple properties:** properties that accept only a single literal value.
3. **Complex properties:** properties that may accept multiple literal values as well as describe typing and ordering of those values.
4. **Simple subjects:** subjects that may contain only instances of themselves and metadata describing those instances.
5. **Complex subjects:** subjects that may contain all of the above.
6. **Social graphs:** relationships between XDI authorities.
7. **Link contracts:** subgraphs used for XDI authorization.
8. **Messages:** XDI documents used in the XDI protocol.

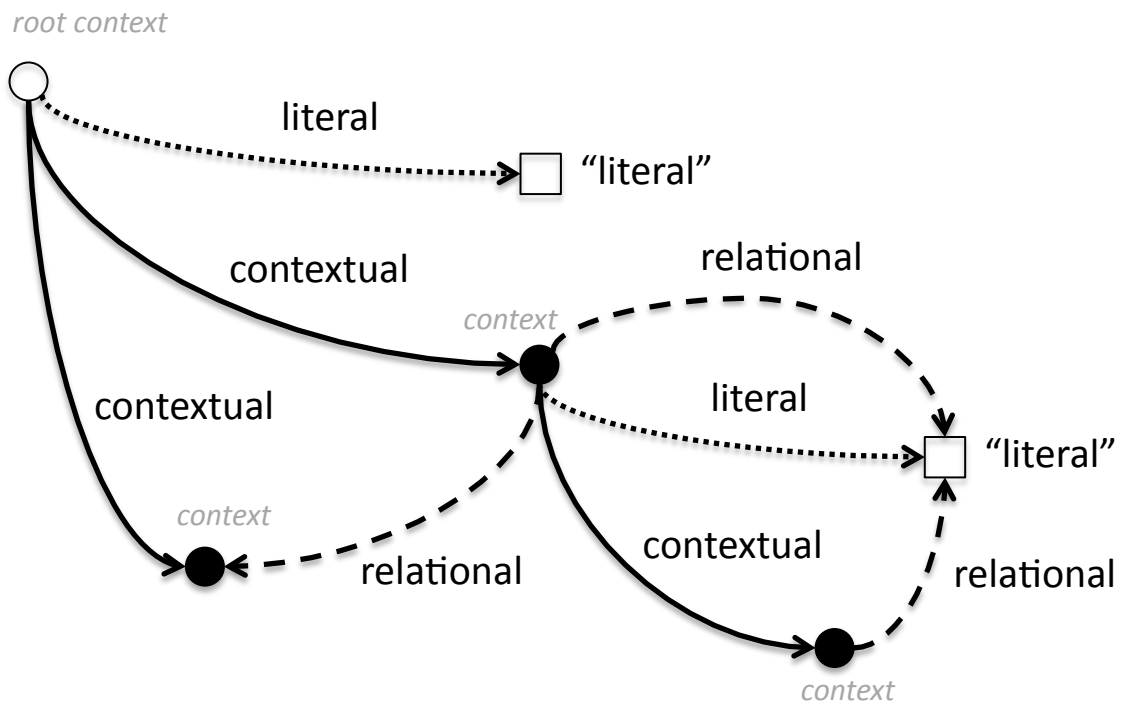
It also illustrates how versioning may be applied to any branch of the graph.

Note: this document uses the XDI metagraph symbols as documented in [The XDI Graph Model](#) 2011-05-08 version.

Notation

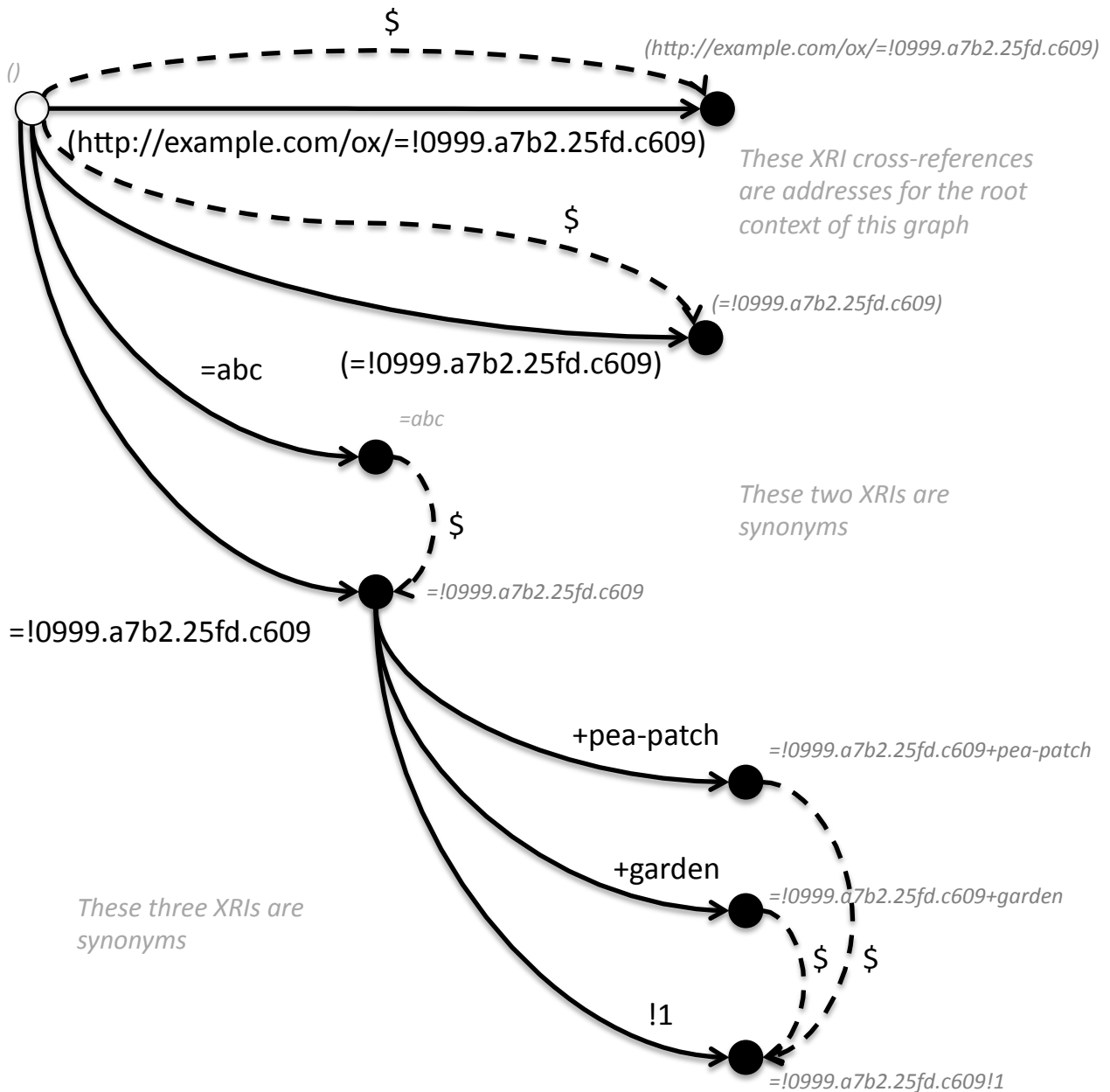
- **Root context node:** Represents the root context of an XDI graph
- **Context node:** Represents an XDI subject
- **Literal node:** Represents a literal XDI object
-  **Contextual arc:** Uniquely identifies a context node
-  **Literal arc:** Uniquely identifies a literal node
-  **Relational arc:** Non-uniquely links nodes

Example

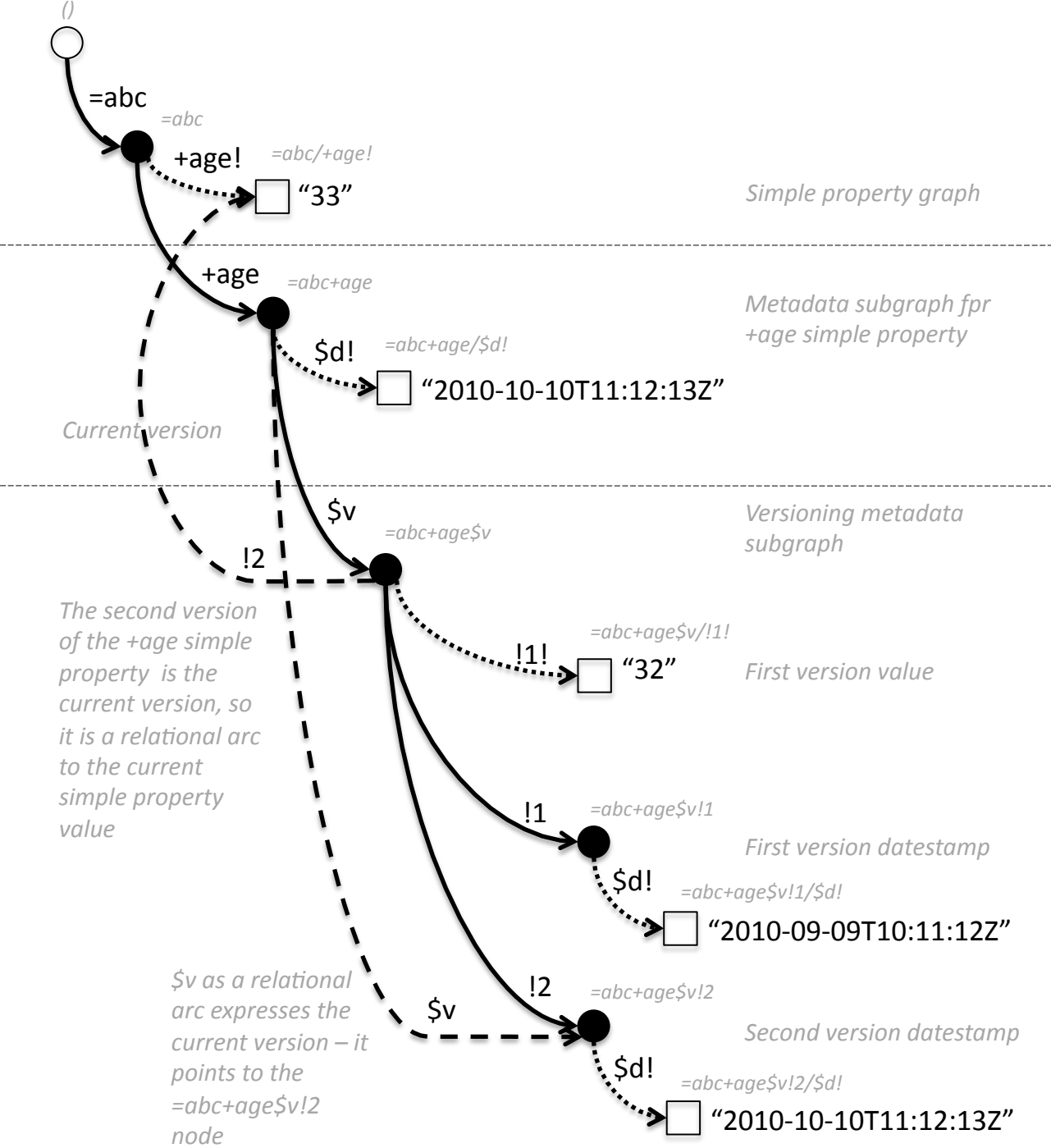


Root contexts and synonyms

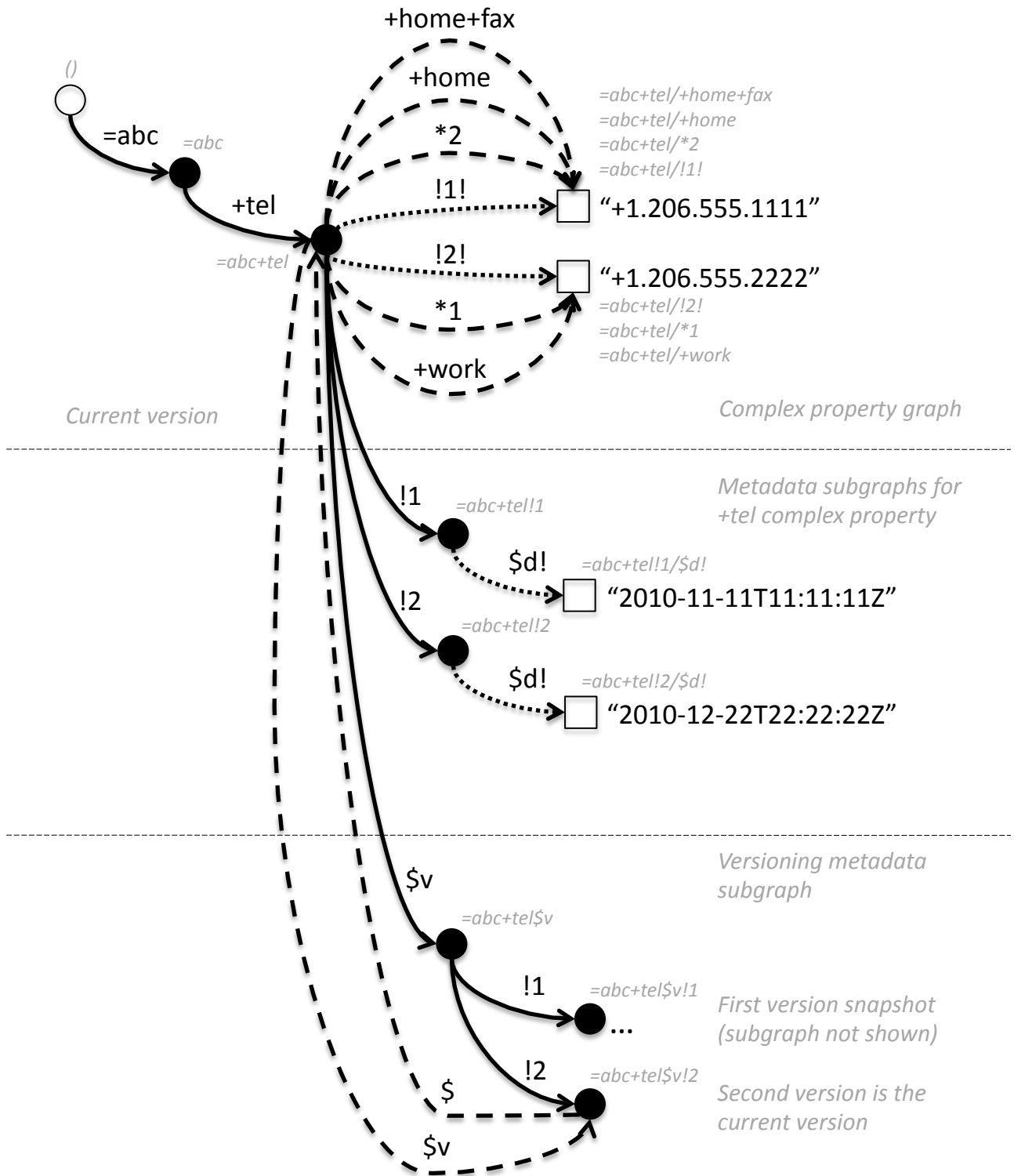
Every XDI context node has exactly one XRI address. Any two XDI context nodes may be declared as equivalent using a relational arc with the metagraph symbol \$. Since this is an equivalence relationship, the inverse arc exists by definition, and is not shown in the graph. Except on the root context node, a \$ relational arc on any context node requires XDI processors to redirect to its target node.



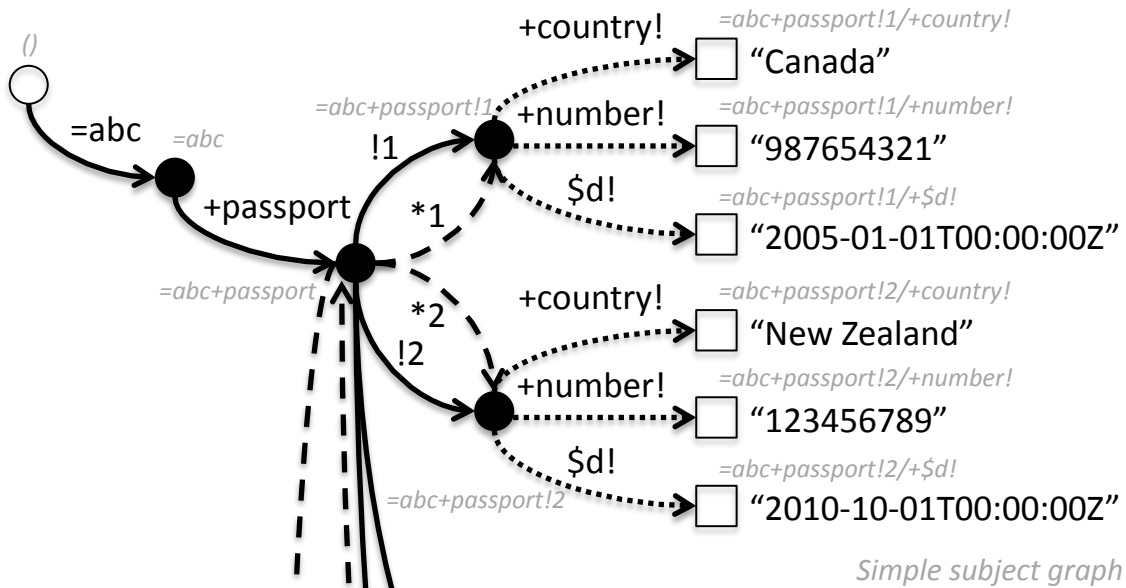
Simple properties



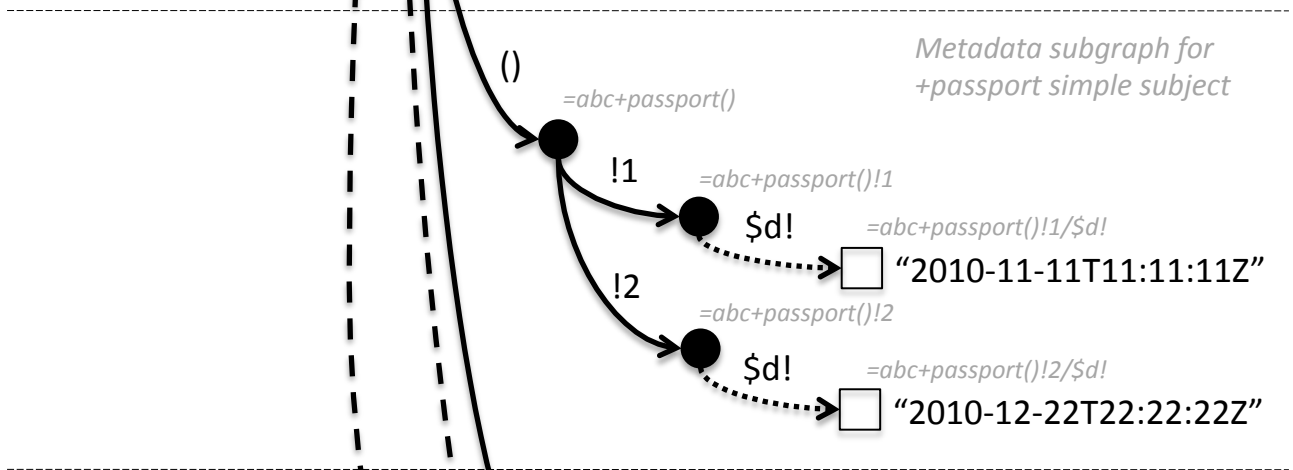
Complex properties



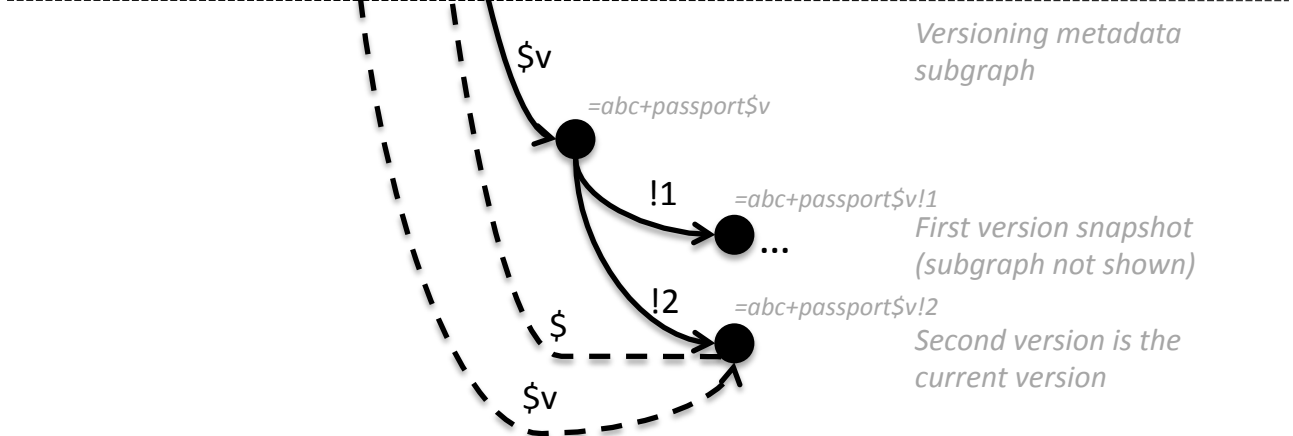
Simple subjects



Simple subject graph



Metadata subgraph for +passport simple subject

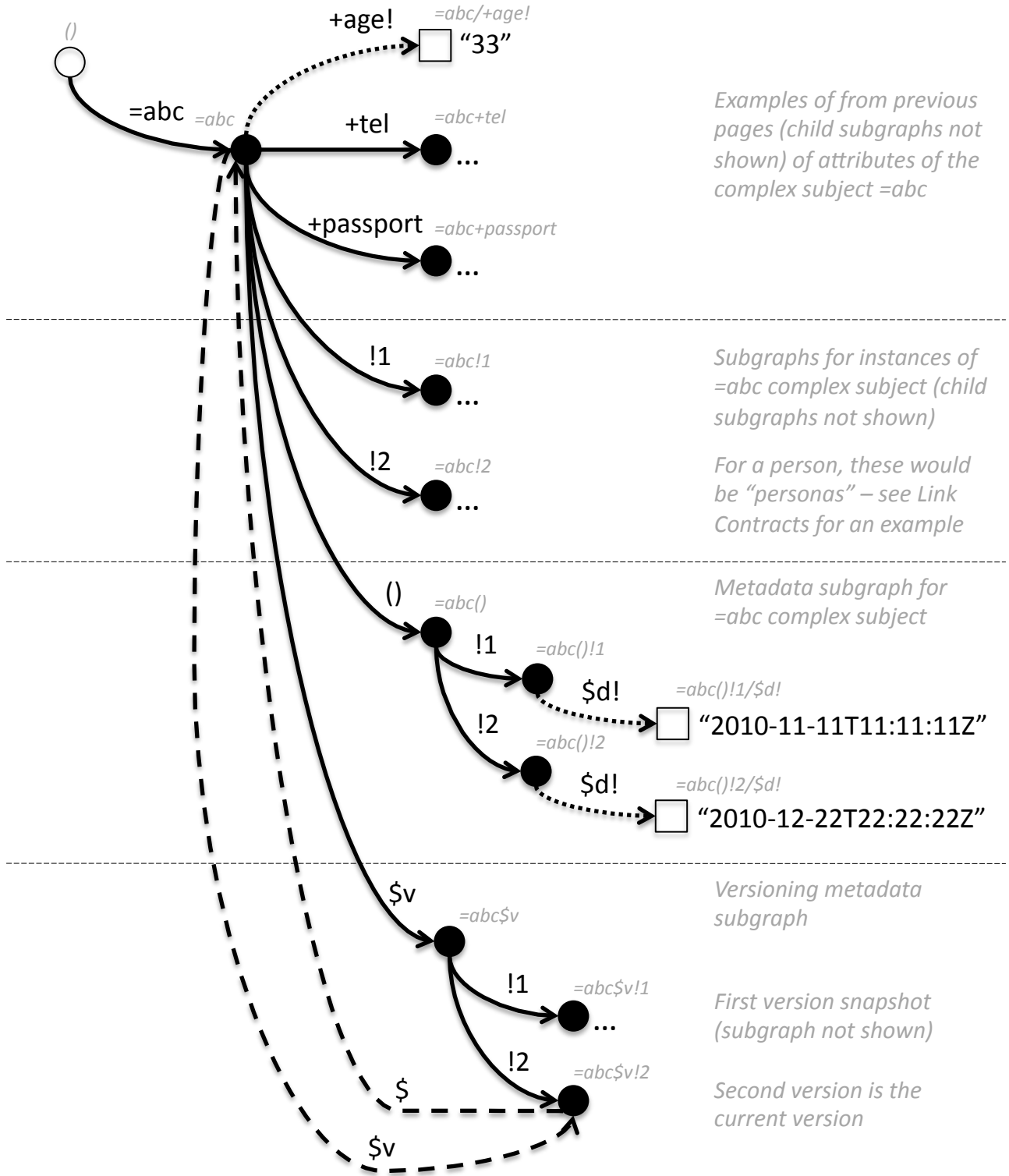


Versioning metadata subgraph

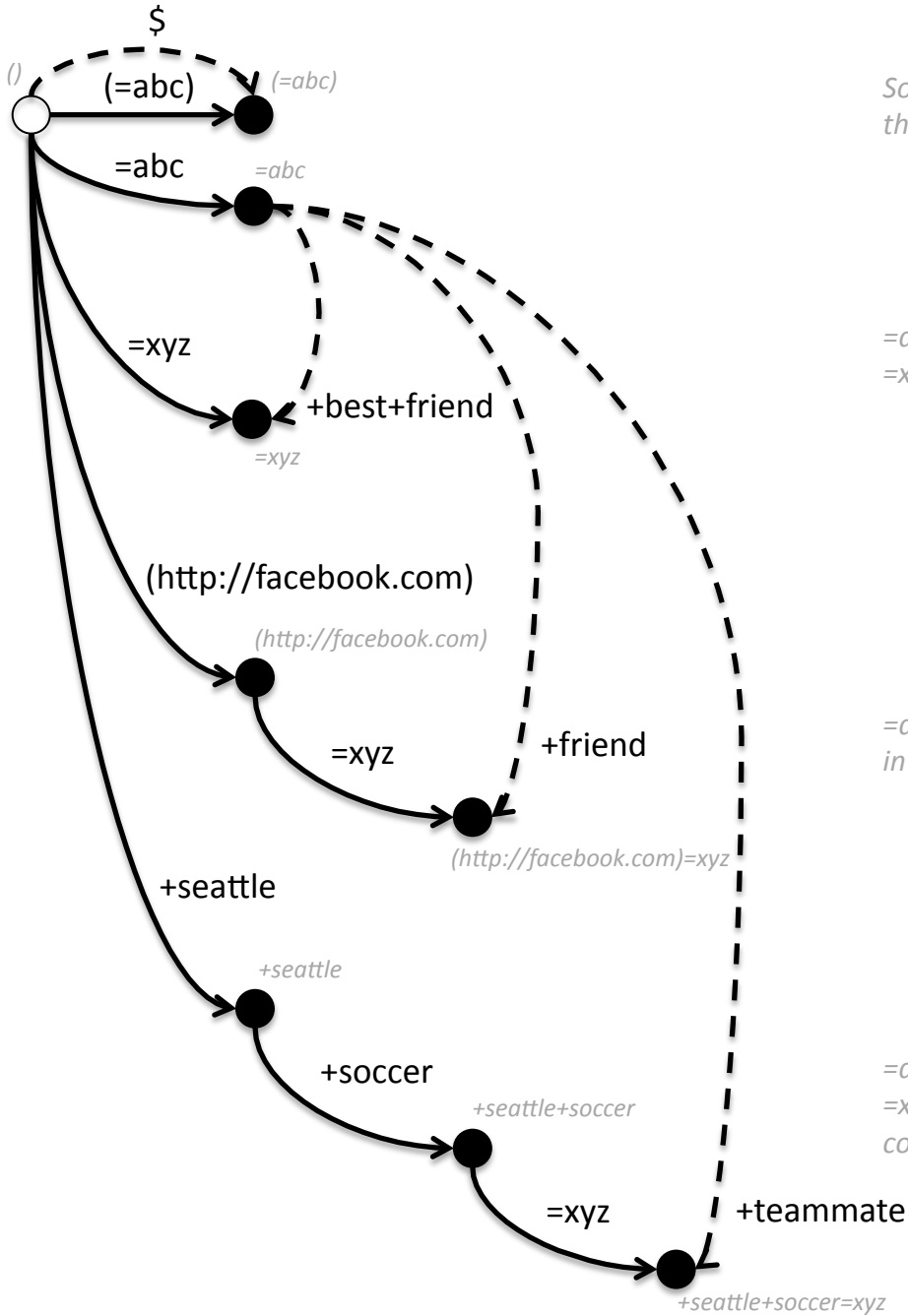
First version snapshot (subgraph not shown)

Second version is the current version

Complex subjects



Social graphs



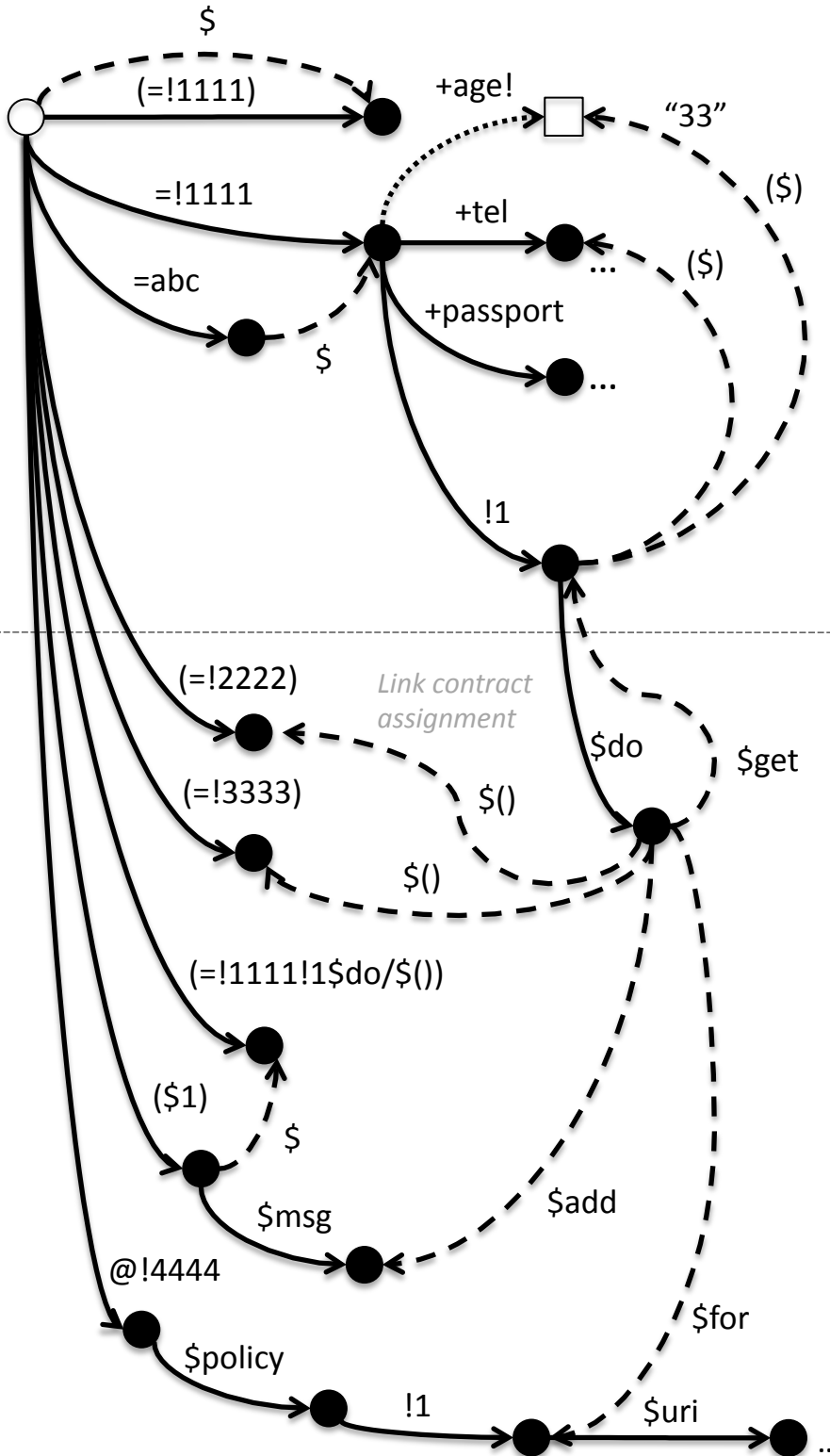
Social graph expressed at the (=abc) endpoint

=abc is best friends with =xyz

=abc is friends with =xyz in the Facebook context

=abc is a teammate of =xyz in a Seattle soccer context

Link contracts



(\$) is a variable, so these relational arcs indicate the set of attributes of *=!11111* that are included in the persona *=!11111*

The persona *=!11111!1* is a collection of attributes from *=!11111*

Link contract

\$get permission

\$do is the root node of the link contract

This *\$add* permission is to *(\$1)\$msg*. *(\$1)* is a variable with a synonym of *(!11111!1\$do/\$())*. This means it applies to all assignees of this link contract.

\$for identifies the policy or policies that apply to this link contract (privacy, security, forwarding, etc.)

Messages

