BFO 2020 History Axioms

History of and has history are inverse relations [abx-1]

$\forall a,b\,(\text{historyOf}(a,b) \leftrightarrow \text{hasHistory}(b,a))$

History of is functional on second argument [zek-1]

$\forall p,q,r\,(\text{historyOf}(p,q) \wedge \text{historyOf}(p,r) \rightarrow q=r)$

History of is functional on first argument [woe-1]

$\forall p,q,r\,(\text{historyOf}(p,q) \wedge \text{historyOf}(r,q) \rightarrow p=r)$

Every history is the history of something [vvy-1]

$\forall h\,(\exists t\,\text{instanceOf}(h,\text{history},t) \rightarrow \exists m\,\text{historyOf}(h,m))$

Every material entity has a history [okt-1]

$\forall m\,(\exists t\,\text{instanceOf}(m,\text{materialEntity},t) \rightarrow \exists h\,\text{historyOf}(h,m))$

A material entity participates in its history [lga-1]

$\forall h,m\,(\text{historyOf}(h,m) \rightarrow \forall t\,(\text{existsAt}(m,t) \rightarrow \text{participatesIn}(m,h,t)))$

Material entity and its history exist at exactly the same times [uzz-1]

$\forall m,h\,(\text{historyOf}(h,m) \rightarrow \forall t\,(\text{instanceOf}(m,\text{materialEntity},t) \leftrightarrow \text{instanceOf}(h,\text{history},t)))$

History of has domain history and range material entity [rph-1]

$\forall a,b\,(\text{historyOf}(a,b) \rightarrow \exists t\,\text{instanceOf}(a,\text{history},t) \wedge \exists t\,\text{instanceOf}(b,\text{materialEntity},t))$

Alan Ruttenberg, September 26, 2022. The most recent version of this file will always be in the GitHub repository https://github.com/bfo-ontology/bfo-2020