BFO 2020 History Axioms

History of and has history are inverse relations [abx-1] \forall a,b (historyOf(a,b) \leftrightarrow hasHistory(b,a)) History of is functional on second argument [zek-1] $\forall p,q,r (historyOf(p,q) \land historyOf(p,r) \rightarrow q=r)$ History of is functional on first argument [woe-1] $\forall p,q,r (historyOf(p,q) \land historyOf(r,q) \rightarrow p=r)$ Every history is of a material entity [vvy-1] \forall h(\exists t instanceOf(h,history,t) \rightarrow \exists m historyOf(h,m)) Every material entity has a history [okt-1] \forall m(\exists t instanceOf(m,materialEntity,t) \rightarrow \exists h historyOf(h,m)) A material entity participates in its history [lga-1] \forall h,m(historyOf(h,m) $\rightarrow \forall$ t(existsAt(m,t) \rightarrow participatesIn(m,h,t))) Material entity and its history exist at exactly the same times [uzz-1] \forall m,h (historyOf(h,m) \rightarrow \forall t (instanceOf(m,materialEntity,t) \leftrightarrow instanceOf(h,history,t))) History of has domain history and range material entity [rph-1] \forall a,b (historyOf(a,b) $\rightarrow \exists$ t instanceOf(a,history,t) $\land \exists$ t instanceOf(b,materialEntity,t))

Alan Ruttenberg, November 12, 2021. The most recent version of this file will always be in the GitHub repository https://github.com/bfo-ontology/bfo-2020

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