Graph-Theoretic Property: \textit{atisHeterarchyConnectedComponentsSet}

\textit{(Graph-theoretic properties} are those properties that are part of the meta-theory and have been abducted from graph theory to be used as a tool to provide solutions concerning the theory. Those solutions may be assigned as values to components or relations of the theory and thereby become part of the theory.)

Heterarchy-connected components set, \( \Theta_{HA} \), is a set of system path-connected components with no primary-initiating components.

\[
\Theta_{HA} = \{ x \mid x \in \mathcal{S}_o \land x \not\in \mathcal{P}_I \land \exists y \exists x \in \mathcal{R}[(x,y) \in \mathcal{E}] \}
\]

Heterarchy-connected components set is a set of components, \( x \); such that, the components, \( x \), are in a subset of the object-set, and \( x \) is not a primary-initiating component, and there exist distinct components, \( y \), of the subset, such that \( (x,y) \) is connected.

The following diagram depicts a Heterarchy-Connected Components Set.

\[\text{Heterarchy-Connected Components Set}\]

All components are path-connected in at least one direction and there is no primary-initiating component.