Graph-Theoretic Property: \( \text{atisConnectedComponentsSet} \)

(Graph-theoretic properties are those properties that are part of the meta-theory and have been abduced 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.)

Connected components set, \( _cC \), \( \text{df} \) a set of components that are pair-wise connected.

\[
_c\mathcal{C} = \text{df} \{ x | x \in \mathcal{R} \subseteq \mathcal{S}_0 \land \exists y \in \mathcal{R}(x \neq y \land (x, y) \in cE) \}
\]

Connected components set is a set of components, \( x \); such that, the components, \( x \), are in a subset of the object-set, and there exist distinct components, \( y \), of the subset such that \( (x, y) \) are connected.

The following diagram depicts a Connected Components Set.

![Connected Components Set](image)

Every two components have a path-connection in at least one direction.