

## Set-Theoretic Property: *atis*SystemRelationSet

(*Set-theoretic properties* are those properties that are part of the meta-theory and have been abducted from set 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.)

**System relation-set**,  $\mathfrak{S}_\phi$ , =<sub>df</sub> A non-empty set of ordered pairs of components from the object-set.

$$\mathfrak{S}_\phi =_{df} \{(\mathfrak{x}, \mathfrak{y}) \mid \exists \mathfrak{x}, \mathfrak{y} (\mathfrak{x} \in \mathfrak{S}_{\mathfrak{O}_x} \wedge \mathfrak{y} \in \mathfrak{S}_{\mathfrak{O}_y})\};$$

where ‘ $\mathfrak{S}_{\mathfrak{O}_x}$ ’ and ‘ $\mathfrak{S}_{\mathfrak{O}_y}$ ’ identify the specific *object-sets* of  $\mathcal{U}$  that contain  $\mathfrak{x}$  and  $\mathfrak{y}$ , respectively.  $\mathfrak{S}_{\mathfrak{O}_x}$  and  $\mathfrak{S}_{\mathfrak{O}_y}$  are not necessarily disjoint.

**System relation-set** is defined as a set of ordered components that are in two subsets of the system object-sets.