

## Structural System Property: *atis*ActiveDependentness

(Structural system properties are those properties that are part of the theory and describe patterns of system and negasystem connectedness. The structural properties define the topology of the system, and every affect relation defines a topology on the system.)

**Active dependentness**,  ${}_{AD}\mathfrak{S}$ , =<sub>df</sub> a partition,  $\mathfrak{y} = (V \subset G_0, R \subset G_A)$ , characterized by components that are initiating-end-components of incident affect-relations.

$${}_{AD}\mathfrak{S} =_{df} \mathfrak{y} \mid \forall \mathbf{u} \in \mathfrak{y}(V) [\mathbf{u}(\mathbf{e}) \in {}_I E]$$

***M*: Active dependentness measure**,  $\mathcal{M}({}_{AD}\mathfrak{S})$ , =<sub>df</sub> a measure of the initiating degree of a component.

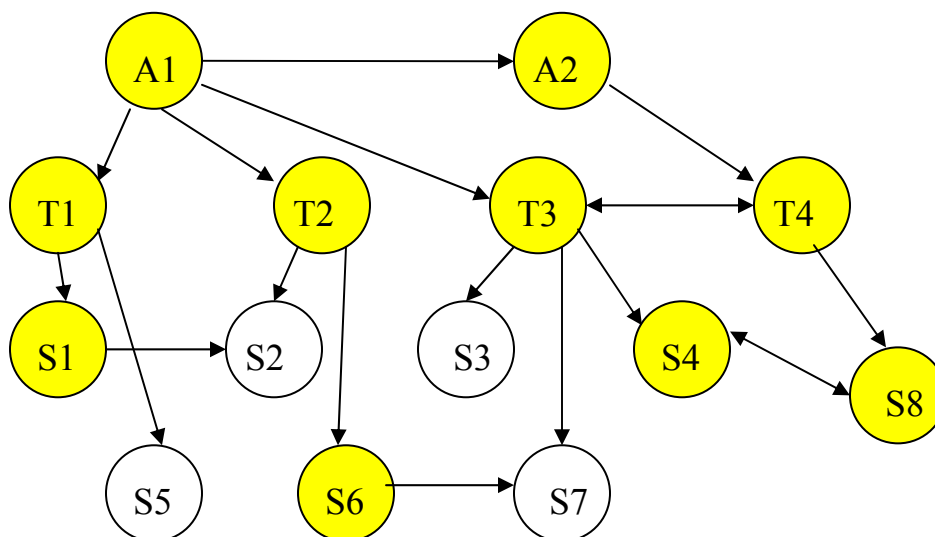
$$\mathcal{M}({}_{AD}\mathfrak{S}) =_{df} \left\{ \left[ \sum_{i=1, \dots, n} \left( \prod_{j=1, \dots, m} d_I(\mathbf{u})_j \right)_i \right] \div \mathbf{c} \right\} \times 100$$

### Active Dependents in a School System

Administrators:

Teachers:

Students:



**Affect Relation:** Controls Activities of

In this system, there are 10 components that *Control Activities of* other components with respect to *Active Dependents*. Since there are 14 components, then the total possible affect relation paths is  $P[Z(\mathfrak{S}_0)] = 236,975,181,590$ ; and therefore,  $\log_2(P[Z(\mathfrak{S}_0)]) \approx 37$ . The value is determined by finding the product of the degrees of each initiating component. There are 128 paths related to *Active Dependents*.

**Therefore:**  $\mathcal{M}_{AD}(\mathfrak{S}) \approx 338.75$ .

As with other structural system properties, this property is defined as a partition of the system. This is required since only a part of the system may actually be characterized by this property, Active Dependents. The entire system can, of course, also be measured with respect to this property, but if only a portion of the system is characterized by this property then the measure for the entire system may give a misleading value. On-the-other-hand, both the partition and the system could be measured to see if there are any conclusions that can be made from their comparison.