Glossary of select terms

Processes –Anything that transforms inputs to outputs. If there is a flow between two nodes A and B in a network, and that flow gets transformed in some way between A and B, then the component that accomplishes the transformation is a process.

Nodes – A generic term that refers to any point at which flows come together in a network. If the network looks like a traditional soccer ball, the nodes are the corners where the seams come together, and presumably the seams themselves represent flows.

Components – all of the entities in a network…nodes, processes, flows, mechanisms etc.

Areas – Generic term, defined by the context.

Cardinal attributes – "Attributes" and "properties" are similar, although an "attribute" is more permanent; it may change, but if it does, it changes more slowly than a property. If we were speaking of a human being, we might say that green eyes are an attribute, while anger is a property. The term "cardinal" is a way of speaking about the most important attributes, like N-S-E-W on a compass, which serve as the reference points for all other properties. The cardinal attributes of a system are determined by context and the structure of both the system itself and the questions being asked of it.

State variables – Any variable whose value is of interest to us that represents the "state" of a system. The paradigmatic ones for human health, for example, are core temperature and blood pressure, but there are many others…O2 saturation etc. And we might even think of some indices which, though not fundamental variables in themselves, are computed from a number of other variables. So for a national economy, the unemployment rate, the amount of money in circulation, the national debt etc. are all candidate state variables. These variables change over time and serve as measures of system status.

Subsystems – Refers to any subset of the system under consideration. To be a true subsystem, the subset itself needs to have the attributes of a system; otherwise, it's just a component or an ensemble of components.