

Subscribe to our

YouTube Channel

System Modeling

System Modeling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that System.

OR



A **System Model** represent aspects of a System and its environment

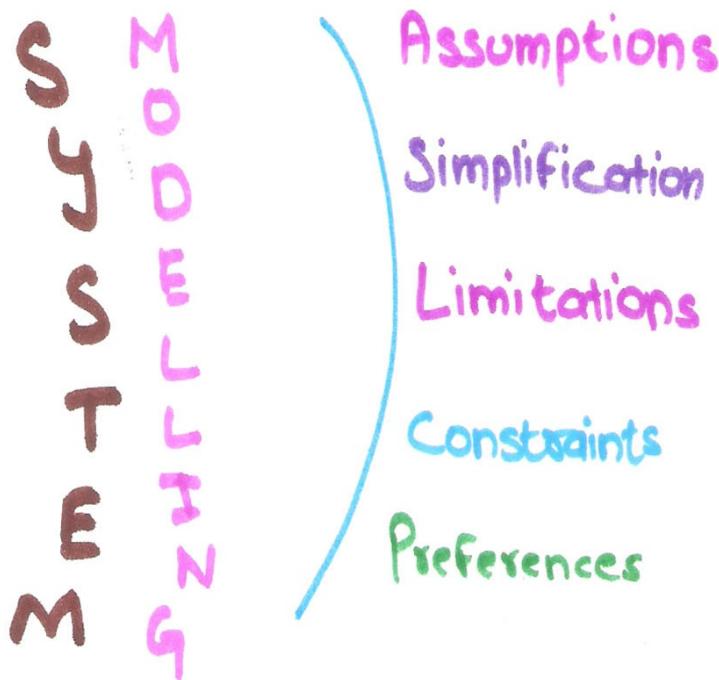
OR

System Modelling is a mean of representing a world view or detailed view of the system using some kind of **Graphical Notation**.

Features of Model :

- Define the processes that serve the needs of the view under consideration.
- Represent the behaviour of the processes and the assumptions on which the behaviour is based.
- Explicitly define both exogenous and endogenous input to the model.
- Represent all linkages (input / output) that will enable the engineer to better understand the view.

To Construct a model, the Engineers should Consider a number of **Restraining Factors**



Subscribe to our
YouTube Channel

• Assumptions

It enables a model to reflect the problem in a reasonable manner by reducing the number of possible **permutations and variations.**

Eg:- Representation of 3d human forms

In this input domain may be that the System engineer makes certain assumptions about the range of allowable human movement (Legs can-not be wrapped around the torso) so that range of inputs and processing can be limited.

• Simplifications:-

that enables the model to be created in a timely manner.

Eg:-

A System Engineer is modelling the needs of the Service Organization and is working to understand the flow of information that Spawns a Service order.

Although a Service order can be derived from many Origins, the engineer categorizes only two sources:

Internal Demand and External Request

This enables a simplified partitioning of input that is required to generate the Service order.

• Limitations:-

That help to bound the System.

Eg

An aircraft avionics System is being modeled for future aircraft. Since the aircraft will be a two-engine design, the monitoring domain for propulsion will be modeled to accommodate a maximum of two engines and associated Redundant System.

Subscribe to our
YouTube Channel

• Constraints

That will guide the manner in which the model is created
And the approach taken when the model is implemented.

Eg:- Suppose a System for the 3-d rendering describes
previously is a single GPU-based processor So Computational
Complexity of problems must be constrained to fit
Within processing bounds imposed by the processor.

• Preferences :-

That indicates the preferred architecture for all data,
functions and technology.

Subscribe to our
YouTube Channel