Default SysML values and specifications of the instance

1. The *SignalSource*, *Amplifier, HighPassFilter*, and *LowPassFilter* blocks are classifiers of *ss*, *ampfr*, *hpfvar* and *lpfvar* instance specifications. Each have a slot with numeric value defined that stays constant throughout each simulation run and are required to solve the constraints. The value of slot *alfa* in each of the *hpfvar* and *lpfvar* instance specifications are required to determine the cut-off frequency for the signal filters. The value of slot *g* in *ampfr* instance specification is required to determine the gain factor of the *Amplifier* block. The value of slot *amp* in the ss instance specification determines the amplitude of the generated signal.

2. Three initial values required for the simulations are determined by instance specifications that are set in the two filter part properties and amplifier part property (parts *hPF*, *lPF* and *a*) in the *SignalProcessor* internal block diagram. Instance specifications *hpfvar*, *lpfvar* and *ampfr* are assigned as the default values to each of these part properties *hPF*, *lPF* and *a*, respectively. These specifications assign an initial value for the unit-less variable *x* in each part that is required for filtering the signal in the signal processor at the start of the simulation. But as the simulation runs, these values do change.