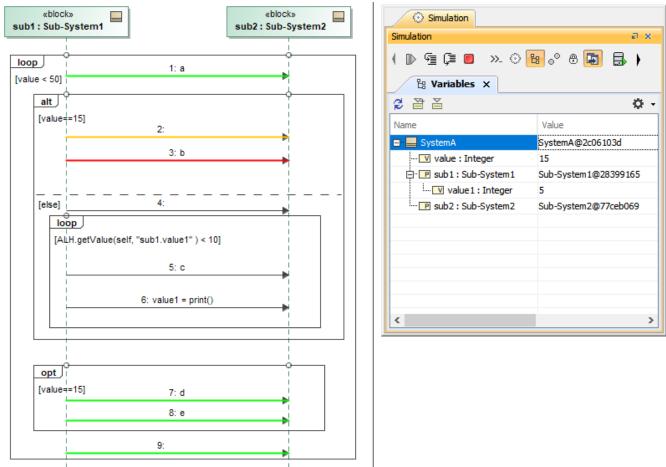
# **Combined fragment**

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A Combined fragment is a combination (expression) of Interaction fragments defined by an Interaction operator and corresponding Interaction operands. A Combined fragment may have Interaction constraints, also called **guards**.

Cameo Simulation Toolkit supports three major Interaction operators: Alternative (alt), Option (opt), and Loop (loop). Combined fragments with various Interaction operators will also be supported (e.g., alt inside loop, opt inside loop, loop inside alt, etc.).





#### Alternative (alt)

The Interaction operator **alt** signifies that the combined fragment represents a choice of Behavior. Only one of the operands will be chosen. The chosen operand must have an explicit or implicit guard expression evaluated as true at a particular point in the Interaction. An implicit 'true' guard is applied if the operand has no guard.

An operand guarded by **else** means a guard that is the negation of the dis-junction of all other guards. If none of the operands has a guard evaluated true, none of the operands are executed, and the remainder of the enclosing Interaction fragment is executed.

## **Option (opt)**

The Interaction operator **opt** signifies that the combined fragment represents a choice of Behavior where either the (sole) operand happens or nothing happens. An option is semantically equivalent to an alternative combined fragment where there is one operand with non-empty content, and the second operand is empty. An implicit 'true' guard is applied if the operand has no guard.

## Loop (loop)

The Interaction operator **loop** signifies that the combined fragment represents a loop. The loop operand will be repeated a number of times. Only an Interaction constraint (not iteration bounds), a Boolean expression shown in square brackets that guards an operand in a combined fragment, is supported.

#### Related pages

- Using Guards on TransitionsOperators