

# User manual: Timed-CSP Simulator

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## 1 Supported operations

In addition to CSP-M which are already defined in ProB, Timed-CSP Simulator supports several timed operators of Timed-CSP. These extra operators are listed in Table 1 where:

- $d$  denotes a time delay which is either an integer  $i$  or a rational number  $\frac{i}{j}$  where  $i$  and  $j$  are integers.
- $P, Q$  are Timed-CSP processes.

Name	Pretty print	ASCII
Delay event prefix	$a \xrightarrow{d} P$	a -<d>-> P
Wait	$WAIT\ d$	WAIT d
Timed timeout	$P \stackrel{d}{\triangleright} Q$	P [<d>> Q
Timed interrupt	$P \stackrel{d}{\triangle} Q$	P /<d> Q

Table 1: Timed Operators in Timed-CSP Simulators

## 2 Timed-CSP mode

There are two ways to enable the Timed-CSP mode in ProB while opening files:

**Explicit:** Files are named with the extension “.tcsp”.

**Implicit:** Files contain any timed operator listed in Table 1.

### 3 Timed-CSP animation

Timed-CSP simulators supports two animation strategy:

**Random:** At each step of the animation, the simulator randomly selects an event or timed progress available from the interface, respectively, to perform.

**Maximal progress:** At each step of the animation, the simulator selects an event or timed progress available from the interface in the following order:

1. Randomly select an external event.
2. Select an internal event.
3. Select a maximal timed progress.
4. Select a random timed progress.