TorXakis

Model Based Testing

of a FIFO Queue
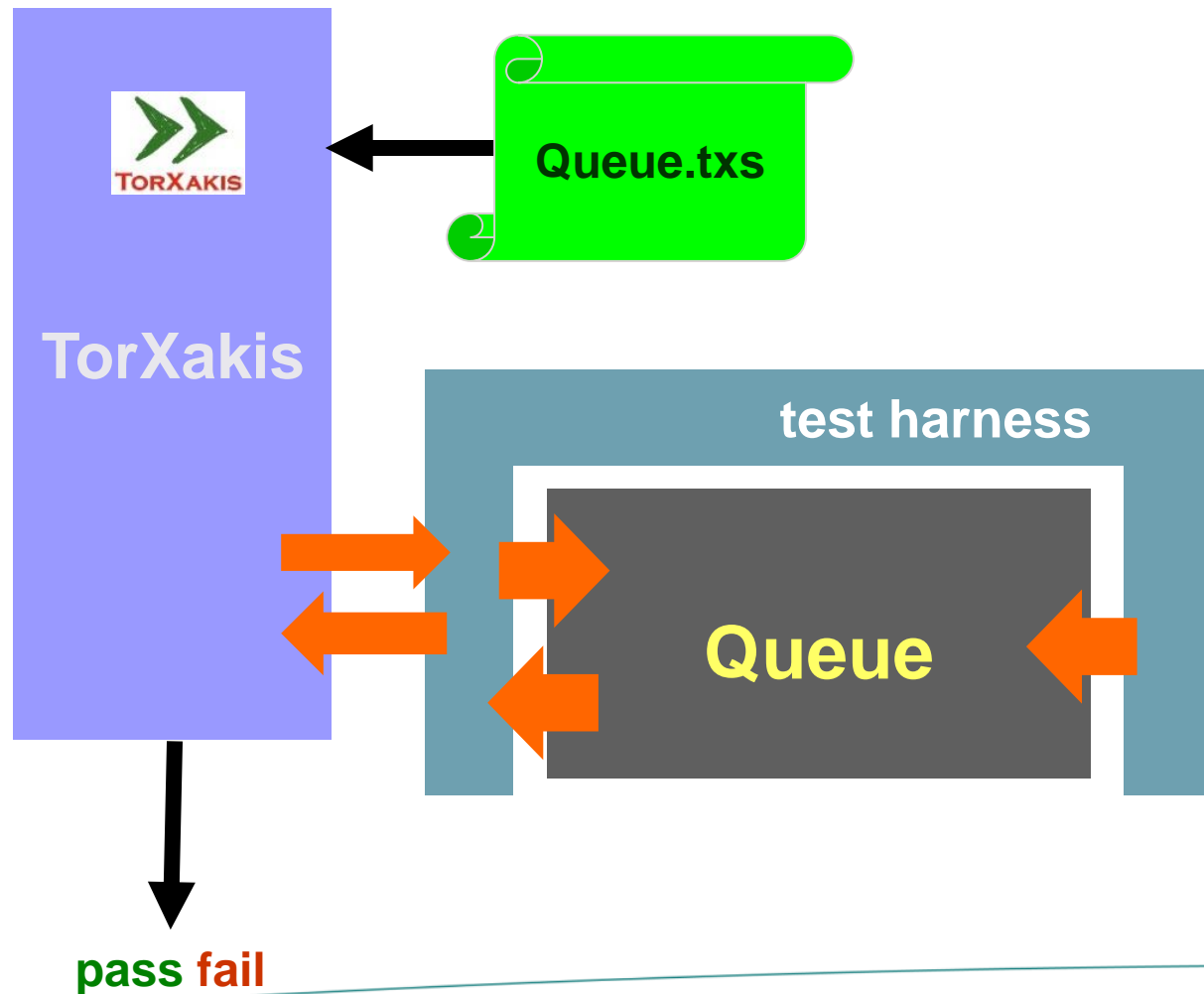
TorXakis : A Fifo Queue

In ! Enq (x) → **Queue** ← **In ! Deq**

→ **Out ! value**

TorXakis : A Fifo Queue

Inp ! Deq

Outp ! value

Inp ! Enq (x)

42 -17 123
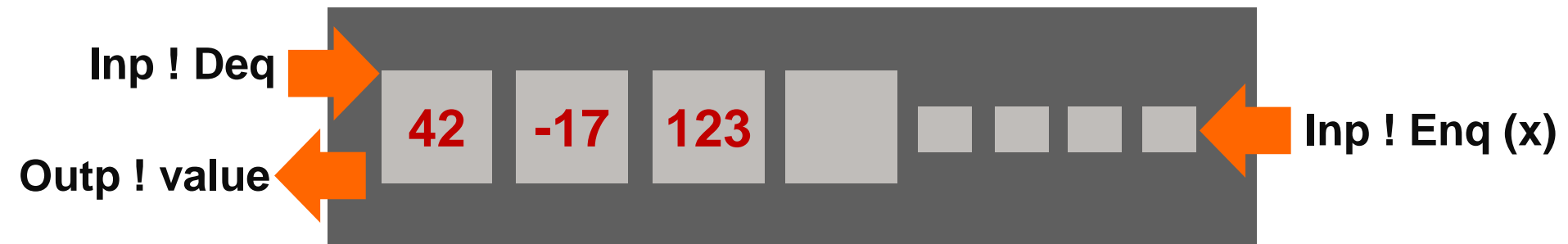
TorXakis : MBT of a Queue
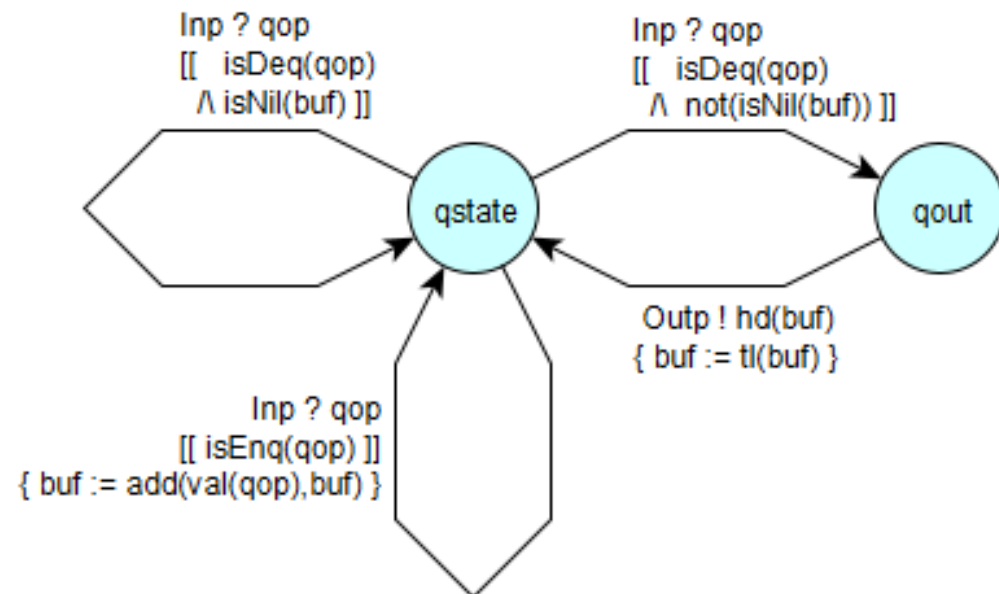

TorXakis

Queue.txs
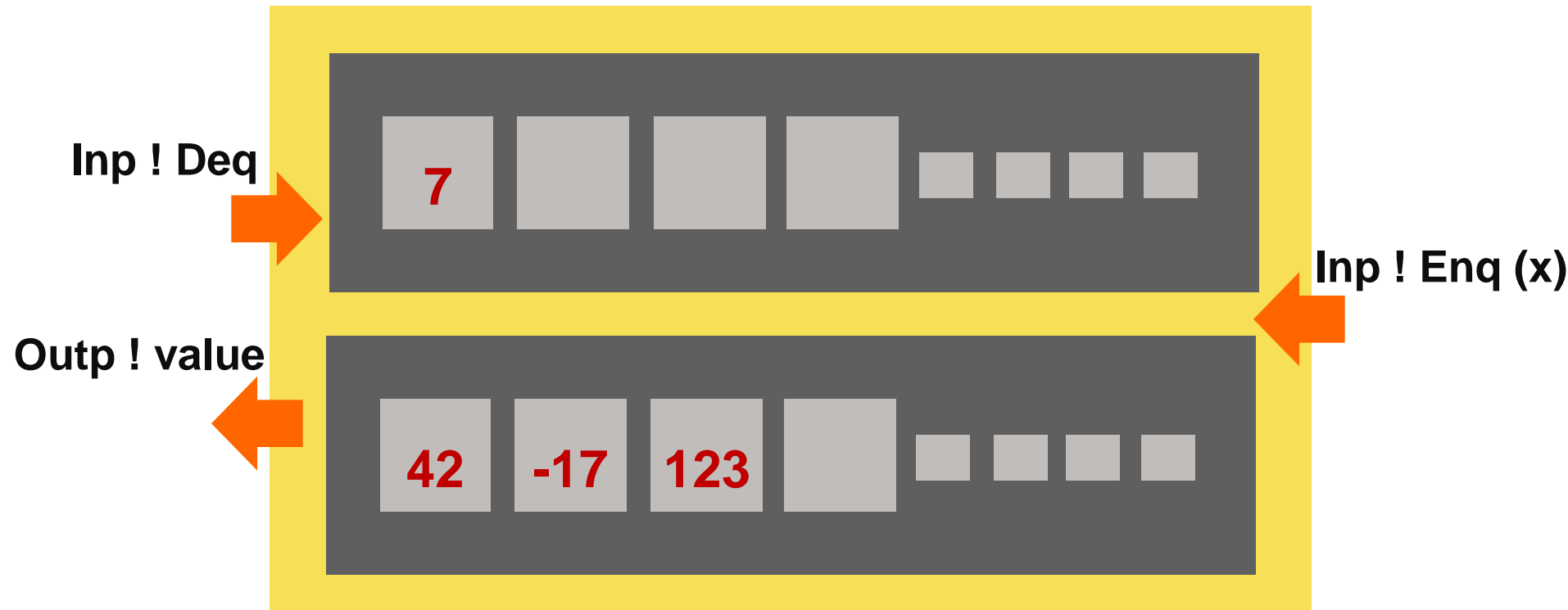
test harness

Queue

pass fail

TorXakis: Queue


```
STAUTDEF  queueStaut  [ Inp :: QueueOp;  Outp :: Int ]  ( )
  ::=
   STATE  qstate, qout
   VAR  buf :: IntList
   INIT  qstate  { buf := Nil }
```

Inp ? qop
[[isDeq(qop)
  ∧ isNil(buf)]]

Inp ? qop
[[isDeq(qop)
  ∧ not(isNil(buf))]]

qstate

qout

Outp ! hd(buf)
{ buf := tl(buf) }

Inp ? qop
[[isEnq(qop)]]
{ buf := add(val(qop),buf) }

Inp ! Deq

Outp ! value

| 42 | -17 | 123 | | | | | |

Inp ! Enq (x)

TorXakis: Parallel Queues

Inp ! Deq

Inp ! Enq (x)

Outp ! value

7

42 -17 123

QueueStaut [Inp, Outp] () ||| QueueStaut [Inp, Outp] ()