

```
init(s, i) ::= counter(s) = i  
              queue(s) = {}
```

```
down(s) ::= if counter(s) > 0  
              counter(s) = counter(s) - 1  
            else
```

```
up(s) ::= if queue(s) not empty      add P to queue(s)  
           resume one process in queue(s) suspend current process P  
        else  
           counter(s) = counter(s) + 1
```