MODULE *Channels*

EXTENDS *Naturals*, *Sequences*

CONSTANTS $P$, $T$
ASSUME $\land P \in Nat$ Number of processes
$\land T \in Nat$ Number of tokens

$NULL \triangleq$ CHOOSE $NULL : NULL \notin Nat$

**--algorithm** *channels*{

**variables** $processes = \{\}$ ;
$tokens = T$ ;
$found = NULL$ ;
$i \quad = 1$ ; $result = \langle\rangle$ ;

**process** ( $go \in Nat \setminus \{0\}$ ) {
*start*: **await** $self \in processes$ ;
*work*:
**await** $found = NULL$ ;
$found := self$ ;
*release*: $tokens := tokens + 1$ ;
}

**process** ( $Main = 0$ )
{
*loop*: **while** ( $i \leq P$ ) {
*take*: **await** $tokens > 0$ ;
$tokens := tokens - 1$ ;
*start*: $processes := processes \cup \{i\}$ ;
*next*: $i := i + 1$ ;
} ;

$result := \langle\rangle$ ;
*collect*: **while** ( $processes \neq \{\}$ ) {
**await** $found \neq NULL$ ;
$result := Append(result, found)$ ;
$processes := processes \setminus \{found\}$ ;
$found := NULL$ ;
}
}

}