$[STUDENT]$

$maxPlayers : \mathbb{N}$

$maxPlayers = 20$

ClubState

$badminton : \mathbb{P}\,STUDENT$
$hall : \mathbb{P}\,STUDENT$

$hall \subseteq badminton$
$\#hall \leq maxPlayers$

ClubState2

$ClubState$
$onCourt : \mathbb{P}\,STUDENT$
$waiting : \text{iseq}\,STUDENT$

$\langle onCourt, \text{ran}\,waiting \rangle\ \textsf{partition}\ hall$

InitClubState2

$ClubState2$

$badminton' = \{\}$

NewGame

$\Delta ClubState2$

$onCourt = \emptyset$
$\#waiting \geq 2$
$\#waiting \geq 4 \Rightarrow \#onCourt' = 4$
$\#waiting < 4 \Rightarrow (\#onCourt' = 2$
$\vee\ (\#onCourt' = 3)$
$head\ waiting \in onCourt'$
$onCourt' \subseteq \text{ran}(1 \mathrel{..} 6 \lhd waiting)$
$waiting' = waiting \restriction ((ran\,waiting) \setminus onCourt')$
$hall' = hall$
$badminton' = badminton$

___ *FinishGame* _____
| $\Delta ClubState2$
|_____
| $onCourt \neq \{\}$
| $onCourt' = \{\}$
| $\exists\, s : \mathrm{iseq}\, STUDENT \bullet$
| $(\mathrm{ran}\, s = onCourt \land waiting' = waiting \frown s)$
| $hall' = hall$
| $badminton' = badminton$
|_____

___ *LeaveHall* _____
| $\Delta ClubState2$
| $p? : STUDENT$
|_____
| $p? \in \mathrm{ran}\, waiting$
| $waiting' = squash\, (waiting \rhd \{p?\})$
| $hall' = hall \setminus \{p?\}$
| $badminton' = badminton$
|_____