
AIRPORT SHARED RESOURCE

CADT ControlTower

OPERATIONS

ACTION BeforeLanding: $\mathbb{N}[o]$

ACTION AfterLanding: $\mathbb{N}[i]$

ACTION BeforeTakeOff: $\mathbb{N}[o]$

ACTION AfterTakeOff: $\mathbb{N}[i]$

PROTOCOLS: $Landing : BeforeLanding; AfterLanding$
 $TakeOff : BeforeTakeOff; AfterTakeOff$

CONCURRENCY: $(Landing \mid TakeOff)^*$

SEMANTICS

DOMAIN:

STATE: $ControlTower = Sequence(boolean)$

INVARIANT:

INITIAL: $Length(ControlTower) = MAX \wedge \forall i \in 0..MAX \bullet !ControlTower[i]$

PRE: true

CPRE: $\exists i \in \mathbb{N} \bullet !self[i]$

BeforeLanding(ra)

POST: $self[ra] \wedge (\forall i \in 0..MAX \bullet self[i] = self^{in}[i] \vee i == ra)$

PRE: $!self[ra]$

CPRE: true

AfterLanding(ra)

POST: $!self[ra] \wedge (\forall i \in 0..MAX \bullet self[i] = self^{in}[i] \vee i == ra)$

PRE: true

CPRE: $\exists i \in \mathbb{N} \bullet !self[i]$

BeforeTakeOff(ra)

POST: $self[ra] \wedge (\forall i \in 0..MAX \bullet self[i] = self^{in}[i] \vee i == ra)$

PRE: $!self[ra]$

CPRE: true

AfterTakeOff(ra)

POST: $!self[ra] \wedge (\forall i \in 0..MAX \bullet self[i] = self^{in}[i] \vee i == ra)$