
MODULE *Gateway*

EXTENDS *Node*, *Sequences*, *Natural*

VARIABLE *Gateway*

GwID \triangleq 2

GatewayNode \triangleq [

- GwNode* \mapsto *Node*(*GwID*),
- GwReceivedEqData* \mapsto BOOLEAN ,
- GwRelayedEqData* \mapsto BOOLEAN

]

ActiveModeInvariant \triangleq

Gw.GwNode.NMode = "Active"

NodeIDs \triangleq 1 .. 6

Nodes \triangleq [*n* \in *NodeIDs* \mapsto *Node*(*n*)]

AlwaysConnectedInvariant \triangleq

$\wedge \exists n \in \text{DOMAIN } \text{Nodes} :$

- Nodes[n].NodeType* = *Sensor*
- $\wedge \text{Nodes}[n].NCon$ = "Connected"

$\wedge \exists n \in \text{DOMAIN } \text{Nodes} :$

- Nodes[n].NodeType* = *Actuator*
- $\wedge \text{Nodes}[n].NCon$ = "Connected"

$\wedge \exists n \in \text{DOMAIN } \text{Nodes} :$

- Nodes[n].NodeType* = *BaseStation*
- $\wedge \text{Nodes}[n].NCon$ = "Connected"
