

MODULE <i>Sensor</i>
EXTENDS <i>Node, Sequences, Natural</i> VARIABLE <i>Sensors</i> $SensorType \triangleq \langle \text{"seismic"}, \text{"Radon"}, \text{"WaterLevel"}, \text{"Gas"} \rangle$ $NodeIDs \triangleq 1 \dots 4$ $Nodes \triangleq [n \in NodeIDs \mapsto Node(n)]$ $Sensor(sid, stype) \triangleq \text{LET } snode \triangleq Node(sid) \text{ IN}$ [$snode \mapsto snode,$ $Stype \mapsto stype,$ $SMode \mapsto snode.NMode$] $SensorTypeInvariant \triangleq$ $\forall s \in Sensors : s.snode.NodeType = Sensor$ $SensorConnectedInvariant \triangleq$ $\forall s \in Sensors :$ $s.snode.NCon = \text{"Connected"} \Rightarrow$ $\exists n \in \text{DOMAIN } Nodes :$ $Nodes[n].NodeType = Gateway \wedge Nodes[n].NCon = \text{"Connected"}$