

# SOEN 342 Project Extended Z specifications

*ReadAllTemperatures* \_\_\_\_\_

$\exists \text{TempMonitor}$

$\text{map?} : \text{SENSOR\_TYPE} \rightarrow \text{LOCATION\_TYPE}$

$\text{read?} : \text{SENSOR\_TYPE} \rightarrow \text{TEMPERATURE\_TYPE}$

$\text{readMap!} : \text{LOCATION\_TYPE} \rightarrow \text{TEMPERATURE\_TYPE}$

$\forall \text{ran readMap!} \in \text{ran read?}$

$\forall \text{dom readMap!} \in \text{ran map?}$

*ReplaceSensor* \_\_\_\_\_

$\Delta \text{TempMonitor}$

$\text{sensor?} : \text{Sensor}$

$\text{location?} : \text{LOCATION\_TYPE}$

$\text{temperature?} : \text{TEMPERATURE\_TYPE}$

$\text{sensor?} \in \text{deployed}$

$\text{deployed}' = \text{deployed} \cup \{s : \text{Sensor}\} \wedge \text{deployed} \setminus \{\text{sensor?}\}$

$\text{map}' = \text{map} \setminus \{\text{sensor?}, \text{location?}\} \wedge \text{map} \cup \{s, \text{location?}\}$

$\text{read}' = \text{read} \setminus \{\text{sensor?}, \text{temperature?}\} \wedge \text{read} \cup \{s, \text{temperature?}\}$