Use Case S5: Detailed Description

Use Case Name: Monitor Heat Index Data
Scenario: Record Daily Heat Index Extremes
Brief Description: With the System running, the System records the heat index extremum data–the minimum and maximum heat index–from the calculated heat index data.
Actors: System
Related Use Cases:
Use Case S15: *The System Shall Save Heat Index Extremum*
Stakeholders: Local and National Weather Bureaus and individuals monitoring local weather data.
Preconditions: The System is running, the heat index data is calculated (see *Use Case S5–Calculate Heat Index*). The extremum heat index data values are initialized: -999.9 for max, 999.9 for min.
Postconditions: The extremum heat index data (minumum and maximum) are noted and coverted to three units (Celsius, Fahrenheit, Kelvin).

Flow of Events

System	**One Wire Temperature Sensor**
	1. Return requested temperature and humditiy data measured
2. Calculates the heat index (See *Use Case S5–Calculate Heat Index*)	
3. Records the date/time of the current heat index measurement.	
4. Compare the current heat index against both the minimum and maximum.	
5. Record the current heat index as an extreme if it is less than or equal to the minimum or greater than or equal to the maximum.	
6. Record the date and time for *event 5*	

Exception Conditions
1a. If either the One Wire temperature or the hygrometer sensor stops working, then the System changes neither the minimum nor maximum values.
1b. If either the One Wire temperature or the hygrometer sensor returns an error, then the System changes neither the minumum nor maximum values.
1c. If the One Wire Network breaks, then the System changes neither the minumum nor maximum values.
4a-5a. If the data has changed from the previous messurement (must be compared), the heat index extremum are reset to the default values and compared for the new date.