Heating Web App requirements

# Functional Requirements

## Administrators form the local network…

### Should be able to configure the program scheduler

1. should be able to set a program name to a date

### Should be able to configure a program

1. should be able to create, clone or edit a program
2. should be able to name a program
   1. system should enforce uniqueness
   2. system should enforce naming rules TO BE CONFIRMED

### Should be able to activate a program

1. should be able to select from a list of programs
2. should cancel any previous program

## Users from local network…

### Should be able to view system status information

1. should be able to… TO BE CONFIRMED

### should be able to override the heating in current program

1. should have limited effective duration
2. user should be able to choose the duration
3. should have default duration of 30 minutes
4. should be able to choose ON or OFF
5. should cancel any previous heating override

## should be able to cancel heating override

1. should remove any active heating override

## should be able to start hot water boost

1. should heat water to higher temperature than usual

# Non-functional Requirements

## The system should operate efficiently…

1. should not excessively cycle the boiler or pumps ON/OFF

## The system should operate safely

1. should heat the water to a safe minimum temperature to prevent legionella and other bacteria contamination TO BE CONFIRMED
2. should not heat the water to a hazardous scalding temperature, TO BE CONFIRMED

## The system should support programs that…

1. should represent a 24-hour period
2. should allow heating to be set ON/OFF in 10 minute intervals during the day
3. should allow hot water temperature to be set in 10 minute intervals during the day
4. should support a Boolean WEEKEND scheduling attribute

## The system has a program scheduler that…

1. should activate a daily program according to the scheduling rules
2. should maintain a repository that can be used to map a date to a program selection (called dated programs)
3. should activate programs with the following priority: dated programs; weekend programs(if sat/sun), weekday program (if mon-fri), any program, default program

## The system should provide a default program that…

1. should default heating to OFF
2. should default hot water temperature to a safe value (see NFR)

## User interface components…

1. should validate input to prevent users selecting values outside system limits (eg safety limits)

## The system should maintain the hot water temperature

1. should keep the hot water temperature close to the current program setting

## The system should have default operational parameters

1. should have a default program of heating OFF all day and constant HW temperature of TO BE CONFIRMED