# Test Plan

## Use Case: Arm System

* Ensure post condition on the basic flow is asserted (all cells are armed) after valid password entry.
* Ensure system returns to previous state when incorrect password is entered.
* Ensure that use case is not executed when system is not in ready state (system must be enabled and disarmed).

## Use Case: Disarm System

* Ensure post condition on the basic flow is asserted (all cells are disarmed) after valid password entry
* Ensure system returns to previous state when incorrect password is entered
* Ensure that use case is not executed when system is not in ready state (system must be enabled and armed)

## Use Case: Enable System

* Assert happy path satisfies basic flow post condition.
* Assert invalid password entry satisfies "The entered password is invalid." global alternative flow post condition (the system remains disabled).
* Ensure that use case is not executed when system is not in ready state (system must be disabled).
* Assert interruption of password entry satisfies "The Enter Password use case has been ABORTED" global alternative flow post condition.

## Use Case: Disable System

* Assert happy path satisfies basic flow post condition.
* Ensure that use case is not executed when system is not in ready state (system must be enabled).
* Assert invalid password entry satisfies "The entered password is invalid." global alternative flow post condition.
* Assert interruption of password entry satisfies "The Enter Password use case has been ABORTED" global alternative flow post condition.

## Use Case: Run Self-Test

* Assert happy path satisfies basic flow post condition.
* Assert that the use case Notify Break-In is executed if the system is armed and a sensor fails to respond to a heartbeat.
* Assert that the use case Notify Break-In is executed if the system is armed and an alarm fails to respond to a heartbeat.
* Assert that failure details are displayed on the Display if the system is disarmed and a sensor fails to respond to a heartbeat.
* Assert that failure details are displayed on the Display if the system is disarmed and an alarm fails to respond to a heartbeat.

## Use Case: Enter Password

* Assert happy path satisfies basic flow post condition.
* Assert timeout password entry satisfies "The password was not entered within the allotted time (timeout)" global alternative flow post condition.

## Use Case: Notify Break-In

* Assert happy path satisfies basic flow post condition (timeout is started, message is displayed on Display, and the event is logged).

## Use Case: Invalidate Break-In

* Assert happy path satisfies basic flow post condition.
* Assert if password is not valid, “Password is not valid” alternative flow is satisfied and the USE CASE Handle Break-in is executed

## Use Case: Handle Break-In

* Assert happy path satisfies basic flow post condition.
* Assert execution continues if a cell handler is failed, satisfying the basic flow post conditions.
* Assert execution continues if cell handler’s alarms have failed (>1), satisfying the basic flow post conditions.
* Assert if Phone Line has failed “Phone line has failed” specific alternative flow has been satisfied, and execution was able to resume.
* Assert execution continues if the internal sound alarm has failed.