Traceability Matrix

ID	Requirement	Related Use Case	Fulfilled by	Test	Description
1	AED powers on depending on battery level	Normal operation of AED to revive patient.	MainWindow, AED	Set battery level on admin config panel on UI, set patient conditions and then press 'PWR ON' on 'Device Actions' panel	Battery level can be set in admin panel, and if battery > 0, AED should power on and state in the text/audio box
2	AED provides warning when battery is low	Safety scenarios and precautions	MainWindow, AED	Set battery % to 10 or below and start simulation, message will appear on textbox.	Text box should display message when battery is < 10%
3	AED checks whether electrodes are ready and attached	Safety scenarios and precautions	MainWindow, AED	In 'Admin Config' select 'F' for 'Electrodes Ready', text box should show AED cannot function message. Also, while following simulation if radio buttons on patient diagram are not selected and you press 'Attach Defib Pads', there will be text message warning to attach electrodes otherwise it won't proceed	AED should not let you proceed to the next step if electrodes are not functioning properly or are not attached
4	AED can be powered off and be resumed in the same state when	Safety scenarios and precautions	MainWindow, AED	Press 'PWR OFF' button during the middle of simulation on 'Admin Config' panel and 'PWR	Saves AED state even when turned off

	turned on again.			ON' again, it should resume with same state.	
5	User can select whether patient is a child or adult in the admin panel	Normal operation of AED to revive patient.	MainWindow, Patient	In 'Admin Config' panel, select 'Regular' or 'Child' for Body Type	In Admin panel user should be able to set type of patient and it should be reflected with the patient diagram
6	User can set patient conditions for the simulation in the admin panel	Normal operation of AED to revive patient.	MainWindow, Patient	In 'Admin Config' panel, select various patient variables and then select 'Set Patient'	User should be able to set patient conditions, and that should affect simulation and resuscitation process
7	Simulation shows the step of resuscitation the user is in currently on the diagram.	Normal operation of AED to revive patient.	MainWindow, AED	Progress through the simulation and 'AED Plus Display' on left should display what part of process it is in using radio buttons	AED should reflect what part of the process of resuscitation it is using radio buttons, should change as process progresses
8	Program allows user to call emergency services which arrive after a countdown	Normal operation of AED to revive patient.	MainWindow	After starting simulation and going through initial steps, AED will instruct you to click 'Help' button which should start EMS timer and end after 300 seconds where a new window pops up.	There should be a 'Call for Help' button which should start a countdown and a new screen should pop up at the end of the timer which shows ambulance signifying ambulance arriving.

9	AED does not allow shocking of patient if patient is responsive or breathing	Safety scenarios and precautions	MainWindow, AED, Patient	Select 'T' for 'Is Responsive' and 'Is Breathing' in Admin config panel when setting patient, look at instructions on textbox	If you do not select the radio buttons and press the button to attach electrode, when you press the 'Shock' button, AED tells you to attach electrodes and that it can't shocked
10	AED does not allow shocking if user has not moved away from patient	Safety scenarios and precautions	MainWindow, AED	Press 'Clear' button in CPR + Shock panel when AED tells you to	AED should provide warning in text box and not allow you to shock
11	AED provides step-by-step instructions for resuscitation	Normal operation of AED to revive patient.	MainWindow	Read instructions from 'General Instructions' textbox on UI	AED should provide instructions through text/audio box on screen, it also enables/disables buttons based on which part of the process user is in so that they get proper feedback and guidance
12	AED Analyzes patient's condition and provides instructions on how to proceed	Normal operation of AED to revive patient.	MainWindow, AED, Patient	After attaching defib pads, there will be patient analysis on textbox on UI	AED should analyze patient's pulse range and strength, tell you what condition they have and advise whether you should shock or start/continue CPR
13	AED gives instruction on how to perform CPR and provides feedback on the quality of CPR	Normal operation of AED to revive patient.	MainWindow, AED	Instructions on performing CPR should be displayed on the textbox and after completing a round of CPR, AED will give a rating of CPR in the textbox	AED should provide 4 clicks of Compression button followed by 2 clicks of Breath button as instructions for CPR, everytime CPR is performed, it should rate it out of 3

14	Program allows user to reset simulation	Normal operation of AED to revive patient.	MainWindow	Click 'Reset Simulation' button at the bottom of UI	User should be able to press 'Reset Simulation' button on screen or on 'EMS Arrives' screen to restore state of simulation to the start
15	When AED battery is dead, the simulation still allows for compressions and breaths and EMS still arrives	Safety scenarios and precautions	MainWindow	Either drain AED battery and click buttons for CPR or set battery to 0 while setting initial config.	The simulation should still countdown to the EMS arriving and show the arrival window and also allow clicking of the 'Compression' and 'Breath' buttons even when AED is dead showing some operational capacity
16	AED shows remaining battery, shows time until EMS arrival	Normal operation of AED to revive patient.	MainWindow, AED	UI shows stats at the bottom right of the UI	On the UI, the time for EMS to arrive should be displayed and should be updated every second (300 seconds to arrive) and show battery %