ID	Requirement	Related Use Case	Fulfilled By	Test By	Description
1	Simulate AED's ability to diagnose cardiac arrhythmias (AED-AdminGuide Page.5)	N/A	MainWindow.ui, patientstatuswidget	Perform a test simulation where the GUI is presented with diagrams representing ventricular fibrillation and tachycardia.	Develop a module to simulate the AED's capability to diagnose cardiac arrhythmias, specifically ventricular fibrillation and ventricular tachycardia.
2	Real-time CPR Feedback (AED-AdminGuide Page.14)	N/A	MainWindow.ui, performcprstate	Confirm the AED provides real-time feedback on compression depth, and that visual feedback is clear and corresponds to the user's actions.	Create a system that emulates the real-time CPR feedback feature of the AED Plus, providing visual and textual feedback to guide the user.
3	Visual prompts for a simulated cardiac emergency (AED-AdminGuide Page.4, 15)	N/A	MainWindow.ui, graphs	Check that visual prompts appear as specified in the guide the user correctly through the procedure.	Specify scenarios of a simulated cardiac emergency with visual prompts and their timing to guide the user through a rescue situation.
4	The battery depletes when a shock is delivered. (AED-AdminGuide Page.20)	N/A	MainWindow.ui, batterieswidget	Give a shock and observe the battery display, the battery level will lower as the treatment progresses.	The AED keeps a consistent record of the power level of the device, which the MainWindow can then use to update its display. After the shock, the battery level will consistently decrease (rate of decrease is affected by the power level).
5	AED displays elapsed time. (AED-AdminGuide Page.4, 5 and 9)	N/A	MainWindow.ui,	Monitor the time from AED power on until power off to observe its allotted time.	MainWindow contain a QTimer attribute, which will displays elapsed time that the AED has

					been running.
6	The application user interaction with AED operation (AED-AdminGuide Page.5)	N/A	MainWindow.ui	Run the simulator in Qt to observe the GUI.	Implement an interactive system that allows users to perform actions mimicking real-world AED operations, including electrode placement, shock delivery, and CPR initiation.
7	AED Deployment in Cardiac Emergency (AED-AdminGuide Page. vii)	UC-01	MainWindow.ui,	Test AED in a mock cardiac emergency, verifying that the deployment process aligns with the base use case steps and everything is clear without confusion.	The base use case for administering an AED in a cardiac emergency.
8	AED detects a non-functional battery during self-test (AED-AdminGuide Page.16)	UC-02	MainWindow.ui, selftestst ate	The system should detect the non-functional battery during the self-test and indicate it to the user.	AED detects a non-functional battery during self-test
9	AED Needs Battery Change (AED-AdminGuide Page.18)	UC-02	MainWindow.ui, batterieswidget	Simulate a low battery situation and the battery replacement process.	Verify that the AED operator recognizes the need for a battery change and follows the battery replacement process.
10	AED detects the electrode pads are attached during self-test (AED-AdminGuide Page.11)	UC-01	MainWindow.ui, installelectrodes widget	Run a test where the electrode pads are not properly attached. Verify that the AED software detects this and warns the AED operator.	AED detects the electrode pads are not attached properly during the self-test
11	AED performs self-test successfully (AED-AdminGuide Page.16, 18)	UC-01	MainWindow.ui, selftestst ate	Execute a self-test and ensure that the AED completes it without errors.	Ensure the AED performs a self-test successfully.
12	AED outputs an "Automatic Defibrillator Unit OK" message (AED-OperatorGuide Page.2)	UC-01	MainWindow.ui, attachdefibrillato rpadsstate	Check that the AED system performs a self-check and, if all checks pass, displays the	Ensure the AED provides the correct status message during the initial steps.

				"Automatic Defibrillator Unit OK"	
13	AED indicator light flashes for "call for emergency" (AED-OperatorGuide Page.2)	UC-01	MainWindow.ui, callforhelpstate	Verify the indicator light for "call for emergency" flashes and give the user to do so according to the specifications.	Verify that the AED signals the need to call for emergency help.
14	AED outputs "Attach defib pads to patient's bare chest" (AED-OperatorGuide Page.2)	UC-01	MainWindow.ui, attachdefibrillatorpadsstate, patientstatuswidget	Confirm that the message is clear, the indicator light flashes and occurs at the correct point in the process.	Ensure the AED instructs the operator to attach electrode pads correctly.
15	AED starts analyzing and provides the "Don't touch the patient. Analyzing" message (AED-OperatorGuide Page.2)	UC-01, UC-03	MainWindow.ui, analyzingstate	Initiate the AED's analysis phase and confirm that it correctly instructs the operator not to touch the patient during this critical time.	AED starts to analyze. Ensure the AED instructs the operator not to touch the patient during analysis.
16	AED advises "No shock advised" (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, patientstatuswidget	Verify that the AED correctly advises "No shock advised". Check that this message is unambiguous to the operator.	Ensure the AED provides the correct message when a shock is not advised.
17	AED detects a shockable rhythm (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, patientstatuswidget	Shows the shockable rhythm ensures that it identifies the rhythm correctly and advises the operator to prepare for a shock delivery.	Ensure the AED detects a shockable rhythm and advises the operator accordingly.
18	AED advises Shock (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, analyzingstate	Confirm the AED identifies it correctly and provides clear instructions to the operator to deliver a shock.	Use case for AED advising a shock based on detected heart rhythm.
19	AED Operator performs "Stand clear" warning (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, analyzingstate	Ensure that the "Stand clear" message is noticeable with the indicator light flashes.	Ensure the AED operator provides a warning to bystanders before shock delivery.

20	AED provides a "Shock will be delivered in three, two, one ..." message (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, analyzingstate	Ensure that it provides a clear countdown message.	Ensure AED outputs a countdown to shock.
21	AED shock tone beeps and delivers a shock, providing a "Shock delivered." message (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, analyzingstate	Verify that the AED delivers the shock, and clearly indicates to the operator that the shock has been delivered.	Verify that the AED operator follows instructions to deliver a shock when advised.
22	AED provides a "Start CPR." message (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, performcprstate	The AED should prompt the operator to begin CPR. Confirm that the message is delivered promptly and is clear.	Ensure the AED operator knows the shock is finished and continues following the procedure.
23	AED started analyzing the procedure again and repeated ID 13-21 until emergency services arrived (AED-OperatorGuide Page.2)	UC-03	MainWindow.ui, performcprstate	Verify that the AED repeats the process as outlined in IDs 13-21, and maintains the protocol until the simulation is manually ended to emergency services are arrived.	AED started to analyze again to check did the patient needed more shock.