****Software Test Plan****

****VERSION01****

****Project: GEOMATRIX****

Version: 1.0

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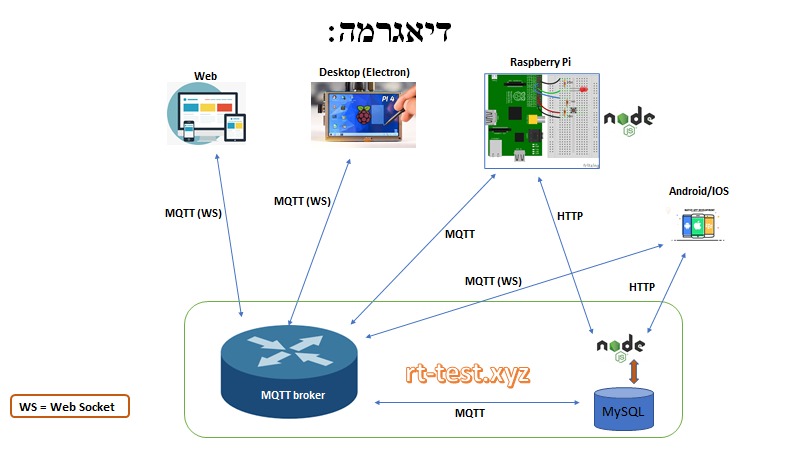
**Document History**

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| --- | --- | --- | --- | --- |
| Version | Date | Author | Description of Change/comment | Verified by/Date |
| 1 | 30.05.21 | Svetlana K. | An \* denotes details to be added later  An (?) denotes details that require clarification | \*\*/\*\* |
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1. ****INTRODUCTION****

**The tested product is system for recording and storage video clips for reporting about data displayed on the screen of medical equipment** .Video recording is performed using external cameras, which are installed towards the screen. The system includes three modules, every module is independent and all of them are connected by Ethernet\Internet (?) infrastructure. The system is integrated of hardware and software parts.

1. THE RECORDING MODULE is consists of 10-20 (?) video cameras and supporting infrastructure (power supply, Internet\Ethernet connection). All cameras can be operated in parallel if their total number does not exceed the maximum allowed. Also some of the cameras can be turned off, if necessary. Cameras can be removed, moved or added without damaging the system, if it is done in accordance with the instructions and the total number of cameras in system does not exceed the maximum allowed.
2. SERVER MODULE is consists of server and supporting infrastructure (power supply, Internet\Ethernet connection). Server is the software/hardware part of the system on which all recorded data is stored and updated, also sorting and deletion mechanism is provided, if necessary. All sensitive manipulations are protected by the presence of users with different access levels for managing the system. The server is also responsible for providing all the necessary information for User Module.
3. USER MODULE is consist of a screen and supporting infrastructure (power supply, Internet\Ethernet connection) with software, which provides access to all video recordings that were recorded by video cameras and saved on the server.The module provides a graphical interface providing the ability to view, sort and download videos in the specified format. MOBILE VERSION(?)…..

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****2.OBJECTIVES****

This test plan describes the testing approach,  the objectives, scope, schedule, risks, approach, Enter&Exit criteria, Test Tree and Testing methodology.and overall framework that will drive the testing.

****3. SUPPORT DOCUMENTS****

Will be attached latter

****4. TREE TESTING****

**1.Checking Documentation**

**2.Unit Tests**

**4.System Tests (Testing of Modules)**

**5.Integration Tests**

**6.Acceptance Tests**

* Video Recording-recording process
* Video Recording - add, remove, replace camera
* Video Recording -quality of video clip
* Video Recording- storage data on the server (parameters of the saved video file)
* Server Remote connection
* Server Upload, Update and Remove data
* Server Backup
* Server Recovering
* Server Stress (overload the application on purpose until it breaks by applying both realistic and unrealistic load scenarios)
* Server Load (process of putting increasing amounts of simulated demand on software to verify whether or not it can handle what it’s designed to handle.)
* Server SOAK (used to analyze the behavior of an application under a specific amount of simulated load over longer amounts of time. )
* Server Security

* GUI -functional (play ,delete, sort, update video clips)
* GUI -usability
* GUI -compliance with the requirements
* GUI -compatibility

1. **ENTRY AND EXIT CRITERIA**

**5.1.Entry Criteria for beginning of the testing**

* Availability of complete or partially testable code
* Appropriately defined and approved requirements
* Access to sufficient and desired test data
* The readiness of test cases
* Setting up of test environment with all the necessary resources like tools and devices
* Spot checks to ensure all the preconditions are met, and eradicate any defects or tasks that are delaying the process timelines

**5.2.Exit Criteria for completing of the testing**

* Ensuring all critical Test Cases are passed
* Achieving complete Functional Coverage
* Identifying and fixing all the high-priority defects
* Fixing all the ‘Show Stopper defects’ or ‘Blockers’
* ensuring that none of the identified Critical/Severity 1 defects are in Open Status
* Re-testing and closing all the high-priority defects to execute corresponding
* Regression scenarios successfully
* 0 critical bugs, 0 regression bugs, 0 medium bugs, 3 low bugs

1. ****TEST STRATEGY****

**6.1 TEST APPROACH**

The tests mainly targets Testing and validating data Requirements Specifications provided by Client.

The project is using an agile approach, with weekly iterations.

At the end of each week the requirements identified for that iteration will be delivered to the team and will be tested.

**6.2.TEST AUTOMATION**

Automated unit tests are part of the development process also automated functional tests are planned .

6.3 **IN SCOPE**

I.Checking Documentation

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II.Unit Tests

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III. System Tests (Testing of Modules separately)

Precondition : EVERY MODULE HAS BEEN COMPLETED

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1. Integration Tests.

Precondition :INTEGRAL SYSTEM HAS BEEN COMPLETED

**Purpose**:To make sure all modules are integrated and whole system is working as it supposed to.

**Scope**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SCENARIOS | SUBLEVELS | COMPLEXITY | NUMBER OF TEST CASES | NEGATIVE TEST CASES |
| Viewing Videos | Sing in  Sorting  Manipulation  Update Video Library | complex | (?) | (?) |
| Server Manipulation | Disconnecting of the server  Reconnecting | medium | (?) | (?) |
| Cameras Manipulations | Connecting new cam  Disconnecting  Reconnecting  Exchange | complex | (?) | (?) |
|  |  |  |  |  |
|  |  |  |  |  |

**Method:**The test will be performed according to Functional scripts, which are stored in Testers storage (?).

**Testers:** Testers Team

**Timing:** After System Tests are complete

1. Exploratory :

**Purpose**: to make sure critical defects are removed before the next levels levels of testing can start

**Scope:**  exploratory test will be applied mainly on the GUI when GUI module is ready for testing.

* Login (?)
* GUI usability
* Viewing, sorting , downloading, deleting of video clips by the user
* New video clips are accessible for user (updating of the video clips library)

**Testers:** Testing Team

**Method:** This exploratory testing is carried out in the application without any test scripts

VI.User Acceptance:

**Purpose:** This test focuses on validating that product meets customer requirements and ready to be delivered. Carried out after all other levels of testing (Exploratory and Functional) are done

**Testers:**  Client side testers.

**Method:** Test Cases based on the inputs from End user

****6.4 OUT OF SCOPE PURPOSE****

Clarity on what we are not going to cover in testing process.

***Not in Scope***: disaster recovery (?) Technical support of the system(?)

**7.**VALIDATION AND BUG MANAGMENT****

Defects found during the Testing will be categorized according to the bug-reporting tool “Jira” and the categories are:

|  |  |
| --- | --- |
| Priority | Impact |
| Critical | This bug is critical enough to crash the system |
| High | It causes a lack of program functionality |
| Medium | This bug prevents other areas of the product from being tested  However others areas can be independently tested |
| Low | Error message , which has minimum impact on product use |

**8**.DEFECT TRUCKING & REPORT****

Team Lead

Assign bug

Developers

Fixes

Flowchart depicts Defect Tracking Process

Tester

Report Bug

Tester

Retest

Yes

APPROVED?

No

Close

****9.STATUS OF THE BUG\FAILTURE****

- New: Just created bug;

- Open: Opened bug and still not solved;

- Rejected: Team Lead rejected it (it's not bug);

- Fixed: SOLVED bug;

- Closed: After bug is fixed, need close this bug;

- Re-Open: Bug was been fixed and closed but appear again with time;

****10. TOOLS****

|  |  |  |
| --- | --- | --- |
| ****Task**** | ****Tool**** | ****Comments**** |
| ****Test Management**** | ****Jira**** | ****Test Cases Design**** |
| ****Bug Tracking**** | ****Jira**** | ****Report Bugs**** |
| ****Agile**** | ****Jira**** | ****Design Sprint milestones**** |
| ****(?)**** | ****Server**** | ****MQTT broker ,MySQL, node.js**** |
| ****(?)**** | ****Embedded**** | ****Raspberry Pi ,node.js**** |

****11.ASSUMPTIONS\ RISKS****

****Assumptions for Acceptance Test Execution****

Developer\Tester team has completed unit, system and integration testing and met all the Requirement’s. User Acceptance testing will be conducted by End-users.

****Risks****

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| --- | --- | --- | --- | --- |
| # | Risk | Impact | Trigger | Mitigation Plan |
| 1 | Functionality changing can impact to loose test cases already written | High | Loss of all test cases | Start write test cases only after all requirements are ready and was reviewed by Team Lead |
| 2 | After upgrade -data was lost | Medium |  | Export high-priority data to any upgrade and re-import after upgrade |
| 3 | Developer or tester going to be sick | Low-Medium | Not get delivered on schedule |  |
| 4 | The Costumer may add new requirements during execution of the project | High |  | To “close” all requirements at earlier stage of the project |

****12.TEST ENVIRONMENT (?)****

**Computer Linux/ Windows (?)**

**Server(?)**

**Cameras for recording+**Ethernet\Internet infrastructure**(?)**

**Mobile simulators(?)**

****13. HARDWARE REQUIREMENTS**** - Computer with 8 GB RAM, Windows 10 and Chrome;

- Android(7 or over) mobile phone J7 and A8;(?)

- iPhone..****.**  (?)**

****14.MILESTONES****

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone Task | Start Date | End Date | Comments |
| STP document | 25.05.21 | 01.06.21 | Will be updating during STD phase(when Requirements document will be ready) |
| Prepare Test Environment |  |  |  |
| Integration Testing |  |  |  |
| System Testing |  |  |  |
| Acceptance Testing |  |  |  |
| STR document |  | 25.07.21 | All bugs/improves of all stages |

****15.ROLES & RESPONSIBILITIES****

***QA tester:***

\* Develop test cases and combine them in test suites – STD

\* Report BUGS

\* Regression testing

\*Manage, Analyze during the requirements analysis phase.

\*Manage, Analyze during testing process and writing documentation.

TTL:

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Developers:

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Product owner:

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| --- | --- | --- | --- | --- | --- |
|  | Product owner | Software dep. | Hardware dep. | Research dep. | Quality Assurance |
| Names | Oleg | \*\* | \*\* | \*\* | Svetlana K. |
| Responsibility | Setting tasks, and priorities. Highlighting issues requiring clarification.  Define requirements to the system, features to be tested and not to be tested. | Providing all the necessary software that works appropriately for all processes of the system . | Providing all the necessary hardware that works appropriately  for all processes of the system . | Carrying out and documentation of all necessary researches. | Quality assurance during life cycle of development and testing of the system. Defining and reporting software defects for their further fixing. Taking a part in improvement of the system. |
| Result of work | No misunderstanding and unresolved issues refers to System ,requirements ,priorities and features to be tested | 1. Software for testing system readiness before incubation cycle 2. Software for performing incubation cycle 3. Software for reporting and documentation after incubation cycle | 1. Hardware for testing system readiness before incubation cycle 2. Hardware for performing incubation cycle 3. Hardware for reporting and documentation after incubation cycle | Researches documentation and database | Performing all test  To confirm that system works as appropriate according to requirements of product owner.  Full stack of documentation represents testing process and its results (STP,STD,STR) |
| Notes |  |  |  |  |  |