Immersive Field Simulator R111.1

Test Plan

9-May-22

Version E1-0.1

**HIP Version: 2018.1-S10b04**

*Enter the version of HIP that this project is following*

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In this document, the convention of square brackets is used to indicate text that is to be replaced by the document author. If a number is included, the intent is that this represents text or a section that will be repeated as many times as necessary. For example, the section heading **3.2.1 [Requirement 1]** indicates that that section will be copied as many times as necessary, with each occurrence of **[Requirement 1]** replaced by the name and reference number of a requirement.

General Guidance applies to all HIP types (i.e. POP, Subproject, Submini, Standalone Project, Standalone Mini, Express Delivery). Note: this list is not complete and may be updated as HIP types are defined.

[Express Delivery Guidance: Throughout the document the iteration that should be used for Express Delivery is C1].

Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Rev | Phase/Iteration/Build | Date  (DD-MON-YYYY) | Author | Description of Changes Made |
| 0.1 | E1 | 9-May-22 | Jithin | R111.1 plan |
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# Introduction

General Guidance:

This section of the Test Plan is the responsibility of the Test Manager.

It is recommended that the author specify in each section the lifecycle requirements for each section of the document, indicating the iteration in which that section must first be completed and each subsequent iteration in which it must be updated.

## Purpose

General Guidance:

There is very rarely a need to expand on the content of this subsection.

The purpose of this Test Plan document is to:

* Show the “breadth” view of the test strategies within the Test discipline for the project. It provides a central artifact to govern the planning and control of the test effort. It defines the general approach that will be employed to test the deliverables and to evaluate the results of that testing and is the top-level plan that will be used by test managers to govern and direct the detailed testing work.
* Provide visibility to stakeholders in the testing effort that adequate consideration has been given to various aspects of governing the testing effort, and where appropriate to have those stakeholders approve the plan. For Inception Test plan shall be fully elaborated with available information and refined at each iteration. Test plan will provide information on overall strategy, types of testing planned at what iterations.

The Test Plan describes the test scope and effort of the project without going into significant detail of the individual tests. The detailed tests are captured in test cases and executable tests as the use cases and requirements are defined. In iterative development, the Test Plan is the breadth while the test cases and executable tests provide the depth.

This Test Plan supports the following specific objectives:

* Identifies the motivation for and ideas behind the test areas to be covered.
* Identifies the items that should be targeted by the tests.
* Outlines the testing approach that will be used.
* Identifies the required resources and provides an estimate of the test efforts.
* Lists the deliverable elements of the test project.

## Scope

General Guidance:

There is very rarely a need to expand on the content of this subsection.

This Test Plan applies to the Immersive Field Simulator R111.1 project. It will be developed initially as part of the first iteration of Inception and updated with each subsequent iteration to reflect the incremental increase in project deliverables. This Test Plan covers only test that is performed as part of the Test discipline.

## Evaluation Mission

General Guidance:

The following general mission statement is meant to apply to most if not all versions of this Test Plan. There is no need to refine or expand this subsection unless there is something unique about this project.

The primary mission of Test is to measure Quality and provide relevant and constructive feedback to the other project contributors, the result of which will drive improvements in later iterations and eventually contribute to decisions to release the product for general use.

Specific to the primary mission, Test will trace to and test to requirements, cover changed areas as much as possible, find and document defects, communicate findings, and advise about perceived project risks. Repeatable and efficient methods will be used throughout the effort.

## Definitions, Acronyms, and Abbreviations

General Guidance:

The author of this document shall describe in this section any abbreviations, acronyms or terms that are not found in the glossary but which are deemed necessary to understanding this work product.

Below are the terms, acronyms, and abbreviations used within this document. Additional project-specific terms can be found in [GLOS].

| Abbreviation | **Reference Name** | **Reference can be found at:** |
| --- | --- | --- |
| 3D | Three-dimensional model |  |
| OTS | Operator Training Simulator | Refers to Honeywell’s UniSim Competency Suite used for Operator Training of process plants |
| IFS | Immersive Field Simulator |  |
| SOP | Standard Operating Procedure |  |
| PPE | Personal Protective Equipment | Specialized clothing or equipment worn by employees for protection against health and safety hazards. Personal protective equipment is designed to protect many parts of the body, i.e., eyes, head, face, hands, feet, and ears |
| Car Seals | Car seals are simple devices used to lock or seal a valve to prevent unauthorized operation |  |
| PI | Program Increment |  |
| VR | Virtual Reality |  |
| Tools | Lesson specific Tools | The tools selected during the execution of a lesson. For example, walkie talkie, Lock out, Tag out, Nitrogen hose utility, etc. |

## References

| **Reference Name** | **Reference can be found at:** |
| --- | --- |
| IFS R111.1 Requirements | https://confluence.honeywell.com/display/CMTS/R111.1+PI+Scope |
| IFS R111.1 Architecture | [*https://confluence.honeywell.com/display/CMTS/03-Architecture*](https://confluence.honeywell.com/display/CMTS/03-Architecture) |

General Guidance:

The author of this document shall describe in this section any external references which are deemed necessary to understanding this work product.

[POP Guidance: Include a reference to associated subproject and submini test plans]

[Subproject Guidance: Include a reference to the relevant POP test plan]

[Submini Guidance: Include a reference to the relevant POP test plan]

# Test Strategy

General Guidance:

This section of the Test Plan is the responsibility of the Test Analyst.

## Overall Test Approach

The key requirements of this project which needs validation are:

* Stand Alone Lesson Assessment
* Lesson Status and Reports
* Stand Alone Lesson Editor
* Logic Editor
* Logic Creation
* Lesson Import/Export
* Technology upgrade of Management Console from AngularJS to Angular and Unity

The author of this section shall define and update test approaches in order to answer the following questions:

What are the key quality risks for this project and how are they mitigated by testing?

What are the key considerations driving what type of testing is performed, to what extent and when it is performed? Example- Early mitigation of performance risks, late availability of release/ test environment, level of post migration testing.

What level of automation testing will be deployed and rationale for automating/not automating test cases?

If product interfaces are not available to use for testing during periods in the development lifecycle, are there any plans for verifying in a simulated environment?

*Define if virtualization of test environment is planned for the project with approach and area of virtualized test environment.*

## Test criteria for risk mitigation in Elaboration

This section describes the technical risks registered in JIRA for IFS R111.1 and what tests were done to mitigate them in elaboration/definition phase.

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk JIRA ID** | **Risk Description** | **Technical Response for mitigation** | **Test Approach** |
| [RMTS-10990](https://acsjira.honeywell.com/browse/RMTS-10990) | MRTK support for building IFS client for Oculus, VIVE and other devices may have limitations to take advantage of all device capabilities. | Explore native Steam VR capabilities and compare with MRTK based capabilities.  Make a choice based on the tradeoffs. | Test IFS Client on Oculus and VIVE devices - atleast basic features |
| [RMTS-10994](https://acsjira.honeywell.com/browse/RMTS-10994) | Voice over of dynamic animation with proper timing may not be achievable with the current plug-in of text to speech converter. | Explore the usage of text to speech plug-in to drive the on-demand execution based on input script file for the voice over narration. | Test voice over of 1 selected dynamic animation which has timing-based narration |
| [RMTS-10995](https://acsjira.honeywell.com/browse/RMTS-10995) | Sandboxed simulation run time environment in Service Fabric to execute multiple standalone simulation logic modules may impact other simulation based executions like control system device simulation, safety system device simulation, OTS communication, etc. | Define simulation logic module schema which should be extensible for future enhancements. Design a scalable micro service to run various simulation logic modules in parallel. Design the micro service to be independent of existing micro services  Set a limit on the number of parallel executions that can be supported | Use IFS R110 PCT testbed with full capacity OTS simulation  Use a manual means to load simulation logic modules in the backend service infra  The simulation logic modules can be created using a text editor like notepad  The outputs of the simulation logic execution can be visualized in a simple test client(s)  Run a group of simulation logic modules (2, 5, 11) and check the expected performance and any impact on OTS or vice versa |
| [RMTS-10996](https://acsjira.honeywell.com/browse/RMTS-10996) | Sandboxed simulation run time environment to execute multiple standalone **assessments** in parallel may impact other simulation based executions like control system device simulation, safety system device simulation, OTS communication, etc. | Design a scalable micro service to run various lesson assessments in parallel  Design the micro service to be independent of existing micro services  Set a limit on the number of parallel executions that can be supported | Use IFS R110 PCT testbed with full capacity OTS simulation  Use a manual means to load simulation logic modules and assessments in the backend service infra  The simulation logic modules can be created using a text editor like notepad  Use a test client to drive one or more assessments  Run a group of simulation logic modules (2, 5, 10) and check the expected performance and any impact on OTS or vice versa |
| [RMTS-10997](https://acsjira.honeywell.com/browse/RMTS-10997) | Performance of standalone simulation logic module may not meet ~~500 msec~~ 1 sec loop timing because of Windows Server OS environment and other technical constraints | Measure the latency involved in loop execution with a given set of logic statements  Limit the number of logic statements that can be executed and the rate at which they can be executed | Use IFS R110 PCT testbed with full capacity OTS simulation  Use a manual means to load simulation logic modules in the backend service infra  The simulation logic modules can be created using a text editor like notepad  The outputs of the simulation logic execution can be visualized in a simple test client(s)  Run a group of simulation logic modules (2, 5, 10) and check the expected performance and any impact on OTS or vice versa |
| [RMTS-10998](https://acsjira.honeywell.com/browse/RMTS-10998) | Isolation of users across different sessions to segregate different users across different simulation environments (Ex: some users in OTS based plant operations while other users are in their own standalone simulation based lessons / assessments) in Photon may have limitations to achieve overall NFR of max. number of parallel sessions | Design isolated rooms in Photon services to contain users in different simulation environments | Use test clients to create multiple sessions in Photon and simulate multiple parallel simulation environments |
| [RMTS-10999](https://acsjira.honeywell.com/browse/RMTS-10999) | Publishing of step level results to Simulation editor for debugging/testing purpose of simulation logic execution may not be technically feasible to achieve within~~500 msec~~  1 sec | Check the latency involved in Signal R mechanism  Design a fast notification mechanism in the core services to publish results within ~~500 msec~~1 sec or negotiate on the NFR | Use IFS R110 PCT testbed with full capacity OTS simulation  Use a manual means to load simulation logic modules in the backend service infra  The simulation logic modules can be created using a text editor like notepad  The outputs of the simulation logic execution can be visualized in a simple test client(s). The test client needs to show the step level outputs for every loop based execution  Run a group of simulation logic modules (2, 5, 10) and check the expected performance and any impact on OTS or vice versa |
| [RMTS-11001](https://acsjira.honeywell.com/browse/RMTS-11001) | Bi-directional integration with TechViz library may bring in challenges in IFS Client App because of any specific expectations (unknown at the moment) at design level for seamless UI/UX in the CAVE environment | Identify the controller chosen at the Aramco site  Use the TechViz library to map the controller buttons to the standard actions  Use the TechViz library to get the user, controller, 3D object contexts to act within the IFS client to do data exchange back with the CAVE environment  Use a simple content to try various integration aspects to fully understand the data exchange needs for all IFS features | Use the IFS client with sample content and use the CAVE emulator to try the integration of the controller |

## Regression Test Approach

Regression Tests shall be performed on

* Regression tests on PC Client- Plant walkthrough & Plant Operations- [RMTS-11535](https://acsjira.honeywell.com/browse/RMTS-11535)
* Regression tests on MR App- Plant walkthrough & Plant Operations - [RMTS-11534](https://acsjira.honeywell.com/browse/RMTS-11534)
* Regression tests on Guided Lesson-MR app- [RMTS-11536](https://acsjira.honeywell.com/browse/RMTS-11536)
* Regression tests on Guided Lesson-PC Client - [RMTS-11538](https://acsjira.honeywell.com/browse/RMTS-11538)
* Regression tests on Lesson Assessment-MR app - [RMTS-11537](https://acsjira.honeywell.com/browse/RMTS-11537)
* Regression tests on Lesson Assessment-PC Client - [RMTS-11539](https://acsjira.honeywell.com/browse/RMTS-11539)
* Mutual exclusion of Plant Walkthrough, Plant Operations, Guided lessons, Lesson assessment. - [RMTS-11540](https://acsjira.honeywell.com/browse/RMTS-11540)

Final Regression tests shall be performed on PAR fix impact assessments.

## NFR Validation Test Approach

NFR validation tests shall be performed on

* [IFS R111.1 Product Test Set]: NFRs-Management console (Google Chrome)- [RMTS-10392](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10392&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733937627%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=EdEQH%2Bpb2IVyHYeFM6zTOlvQdjqr6hka%2F7PMszz2pGQ%3D&reserved=0)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Asset Catalog (Google Chrome)- [RMTS-11517](https://acsjira.honeywell.com/browse/RMTS-11517)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lesson Editor (Google Chrome)- [RMTS-11518](https://acsjira.honeywell.com/browse/RMTS-11518)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lessons (Google Chrome)- [RMTS-11519](https://acsjira.honeywell.com/browse/RMTS-11519)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Simulation Editor & Execution (Google Chrome)- [RMTS-11520](https://acsjira.honeywell.com/browse/RMTS-11520)
* [IFS R111.1 Product Test Set]: NFRs-OTS Integration- [RMTS-11521](https://acsjira.honeywell.com/browse/RMTS-11521)
* [IFS R111.1 Product Test Set]: NFRs-Multiuser (MR  ,Vive, Oculus & PC Client)- [RMTS-11522](https://acsjira.honeywell.com/browse/RMTS-11522)
* [IFS R111.1 Product Test Set]: NFRs-Management console (Edge)- [RMTS-11523](https://acsjira.honeywell.com/browse/RMTS-11523)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Asset Catalog (Edge)- [RMTS-11524](https://acsjira.honeywell.com/browse/RMTS-11524)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lesson Editor (Edge)- [RMTS-11525](https://acsjira.honeywell.com/browse/RMTS-11525)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lessons (Edge)- [RMTS-11526](https://acsjira.honeywell.com/browse/RMTS-11526)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Simulation Editor & Execution (Edge)- [RMTS-11527](https://acsjira.honeywell.com/browse/RMTS-11527)
* [IFS R111.1 Product Test Set]: NFRs-Management console (FireFox)- [RMTS-11528](https://acsjira.honeywell.com/browse/RMTS-11528)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Asset Catalog (FireFox)- [RMTS-11529](https://acsjira.honeywell.com/browse/RMTS-11529)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lesson Editor (FireFox)- [RMTS-11530](https://acsjira.honeywell.com/browse/RMTS-11530)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Lessons (FireFox)- [RMTS-11531](https://acsjira.honeywell.com/browse/RMTS-11531)
* [IFS R111.1 Product Test Set]: NFRs-Management Console - Simulation Editor & Execution (FireFox)- [RMTS-11532](https://acsjira.honeywell.com/browse/RMTS-11532)
* [IFS R111.1 Product Test Set]: PC Client NFRs-[RMTS-10391](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10391&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733937627%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=%2BOTCh5L6AN1zKRL1yeLkbyz6bh4Zk71ZSoOx1nHJTb4%3D&reserved=0)
* [IFS R111.1 Product Test Set]: MR Client NFRs- [RMTS-11533](https://acsjira.honeywell.com/browse/RMTS-11533)

## Automated Test Approach

Pre-General Guidance:

The author of this section shall define and update what level of regression testing is planned and the approach used in identifying the regression test cases.

Guidance- Regression test will make sure that fixes or enhancements do not create problems in the product or in any interface. Specify what areas/ test cases will be tested again, to make sure that nothing else is affected by a particular fix or enhancement. Identify the criteria for retest and for adding tests to the regression test

## Security Verification Testing

General Guidance:

This section of the Test Plan is the responsibility of the Security Tester

The author of this section shall update what level of security testing is planned and the approach used in identifying the type of security testing.

*Types of security testing information is described in the* [*security COE wiki*](https://de08u1685.honeywell.com:8444/display/CSCOE/HPS+Security+Testing)*.*

*Testing of Threat Model controls can be performed by reviewing the Threat Model and developing and executing tests that verify that the control identified in the Threat Model are effective. Alternately, the requirements that specify these controls can be used to develop tests.*

Guidance: Testing for security is typically done during pre-defined iterations during the development lifecycle. In addition the test team for particular security test type might vary. For example basic security tests should be run by the system test team, while advanced testing might be done by the Security Testers or the HPS Cyber Security Center of Excellence (COE)

|  |  |  |  |
| --- | --- | --- | --- |
| **Iteration** | **Security Test Type** | | **Test Team** |
| I1 | | None planned in Inception | NA |
| E1 | The Security test plan has been updated at [IFS Secure Vault](https://sharepoint.honeywell.com/sites/HPSCSCoE/ThreatModels/Threat%20Documents/Immersive%20Field%20Simulator/R101.1/Security%20Test%20artifacts/IFS_R101_Security_TestEvaluation_Summary.docx?d=wf14ad81a10a746d08ce49fe2b47916b2) | | NA |
| C1 | Tests will be planned as per Security test plan | | Security tester |

## Target Test Items

General Guidance:

The author of this section shall provide an outline of the testing that will be performed for each Iteration; test details shall be maintained in quality center tool. This outline represents the intersection between targets and the test types or quality risks. As such, it can be represented in a tabular or spreadsheet format.

The author of this section shall provide an outline of the major testing planned for the project. Note what will be included in the plan (via a “Y”) and record what will explicitly not be included (via blank cells)

Capture rationale, any exceptions and special consideration or remarks on types of testing for each planned iteration. It is recommended to provide requirement coverage information like current testing in E1 covers around 70% of the functionality, but team will be confident of 100% after it is tested at large system test bed

Use a question mark (“?”) when a decision has not yet been made.

The author will also update Transition section if any Final Testing is planned. Final testing is a “sanity test” that has to be carried out on a final media or patch that goes to customer

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Types of Test** | **Functional Test** | **Robustness Test** | **Usability Test** | **Benchmark Test** | **Stability Test** | **Performance Test** | **Capacity Test** | **Topology Test** | **Installation Test** | **Migration Test** | **Compatibility Test** | **Regression Test** |
| I1 |  |  |  |  |  |  |  |  |  |  |  |  |
| E1 |  |  |  |  |  |  |  |  |  |  |  |  |
| C1 |  |  |  |  |  |  |  |  |  |  |  |  |
|  | The following are the tests planned for this iteration   |  |  | | --- | --- | | Requirement ID | Requirement Details | | [RMTS-10389](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10389&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733947622%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=fpgo3nwNaNJWsDwERVaeHEoKb3BfDPLx3Le%2B9mUlYa8%3D&reserved=0) | [IFS R111.1 Product Test Set]: Stand Alone Assessment-IFS Client execution | | [RMTS-10388](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10388&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733947622%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=oLx5XlrbFOlE2JwNmSTF2807OJyQDmU8gGzPbOy6fsU%3D&reserved=0) | [IFS R111.1 Product Test Set]: Standalone Lesson Editor & Lesson Creation | | [RMTS-10387](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10387&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733957615%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=XA1QJoK5h732BRu6l473ZXMxxyE3UAnLOVHjeeq0zXk%3D&reserved=0) | [IFS R111.1 Product Test Set]: Lesson Status | | [RMTS-11515](https://acsjira.honeywell.com/browse/RMTS-11515) | [IFS R111.1 Product Test Set]: Lesson reports | | [RMTS-10386](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10386&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733957615%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=wPSiOy9ghXkiQBtzra9lfFHsspm%2FrdLgSl2OnO%2BJeRQ%3D&reserved=0) | [IFS R111.1 Product Test Set]: Lesson import /Export | | [RMTS-10385](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10385&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733967611%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=AXb2iowiIV5MvMt%2Fvbcon%2FJdPWBAkdN4dOwDnulHci8%3D&reserved=0) | [IFS R111.1 Product Test Set]: Logic Editor & Logic Creation | | [RMTS-11014](https://acsjira.honeywell.com/browse/RMTS-11014) | [IFS R111.1 Product Test Set]: Technology Upgrade- Management Portal Regression | | [RMTS-10390](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Facsjira.honeywell.com%2Fbrowse%2FRMTS-10390&data=04%7C01%7CJithin.Narayanan%40Honeywell.com%7Cd907a51d63f44c9bd95808d9bf8e6f5b%7C96ece5269c7d48b08daf8b93c90a5d18%7C0%7C0%7C637751440733937627%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=fTpffs2%2BQ4KzOooFLS3yPSAfP8hwtGPky12uTpd53t4%3D&reserved=0) | [IFS R111.1 Product Test Set]: Customer Feedback and Backlog (PI1) | | [RMTS-11516](https://acsjira.honeywell.com/browse/RMTS-11516) | [IFS R111.1 Product Test Set]: Migration of Server Build and Agent from R110.1 to R111.1 | | | | | | | | | | | | |
| T1 | **Y** |  |  |  |  |  |  |  |  |  |  | **Y** |
|  | Regression and PAR verification tests for final release | | | | | | | | | | | |

## Outline of Deployment Unit Verification Testing

General Guidance

*Testing to determine if a new function provided is performing well enough to accept it for a major testing effort. If, for example, an application is crashing on initial use, then the system is not stable enough for further testing. DUV testing is optional for small programs where there is only one test bed available for execution or Integration Test has covered the required scope of DUVT.*

*Exceptions to this approach are listed below:.*

1. *No exceptions for POP programs*
2. *There is no need to execute a DUVT if there is no change in the build or if there are no impacts due to fixes that are delivered in the build*
3. *DUVT is mandatory to all programs having more than one test setup/ beds and more than one test teams to execute system test, for all other programs it is optional*

Deployment Unit Verification is performed on each System Build to ensure it is usable by the Test teams for the planned testing cycle. This testing normally spot checks the build as a whole and spot checks the new or changed portions( see Entry criteria and Exit criteria defined in the [HIP Test Terminology Whitepaper](http://acsprocesses.honeywell.com/hps/hip/#ACS.HPS.Processes.SW.HIP.Base.Common.Common/guidances/whitepapers/test_terminology_whitepaper_318FFAD1.html) or Steps of Task : [Run Deployment Unit Verification Test](https://hpsnotessrv2.honeywell.com/process/hip/collaboration/http:/acsprocesses.honeywell.com/hps/hip/#ACS.HPS.Processes.SW.HIP.Base.Test/tasks/run_deployment_unit%20verification_test_sets_BB6B8E21.html) ).

The System test team will not be performing any DUVT testing. This is assumed to be run and maintained by developers.

# Environmental Needs

General Guidance:

This section of the Test Plan is the responsibility of the Test Designer.

This section defines the non-human resources required for the Test.

## Base System Hardware in the Test Environment

General Guidance:

The author of this section shall specify the test bed(s) and/or elements of the test system and the iterations where this hardware is needed.

The specific elements of the test system may not be fully understood in early iterations, so expect this section to be completed or refined over time. It is important however to identify needs as early as possible given the delays normally associated with equipment requisition.

[POP Guidance: This section defines the base system hardware in the test environment for the POP and its associated Subprojects and Subminis.]

[Subproject Guidance: Refer to the POP Test Plan for the base system hardware in the test environment. If there are any additional items that are specific to this Subproject, then define that below.]

[Submini Guidance: Refer to the POP Test Plan for the base system hardware in the test environment. If there are any additional items that are specific to this Submini, then define that below.]

The following table lists the system resources required for the test effort presented in this Test Plan.

| **Resource (e.g., test bed)** | **Quantity** | **Name and Type** | **Relevant Iterations** |
| --- | --- | --- | --- |
| ESXi VMware host | 01 | ESXi6.1 to host Immersive Competency Servers and UniSim OTS Servers | E1-C1 |
| Mixed Reality headsets | 1 per Tester | HP Windows Mixed Reality Headset and 2 Wireless Controllers plus 4meter headset cable (HDMI + USB) | E1-C1 |
| Mixed Reality compatible laptop | 1 per Tester | Gaming laptop with NVIDIA GeForce RTX 2070 or higher with  RAM: 32GB minimum  Processor: 9th generation Intel Core i7-6750H 6-Core  Graphics-NVIDIA GeForce RTX 2070 8GB GDDR6 with Max-Q design  Hard Disk:500GB  USB port 3.0 or higher  Windows 10 Build 1903 or later | E1-C1 |
| XBOX controller for PC Client App | 1 per Tester | Microsoft Xbox One Wireless Controller with Bluetooth (With 3.5 mm Jack) | E1-C1 |

## Base Software Elements in the Test Environment

General Guidance:

The author of this section shall specify the software elements of the test system and the iterations where this software is needed..

The specific software elements of the test system may not be fully understood in early iterations, so expect this section to be completed or refined over time.

[POP Guidance: This section defines the base software elements in the test environment for the POP and its associated Subprojects and Subminis.]

[Subproject Guidance: Refer to the POP Test Plan for the base software elements in the test environment. If there are any additional items that are specific to this subproject, then define that below.]

[Submini Guidance: Refer to the POP Test Plan for the base software elements in the test environment. If there are any additional items that are specific to this submini then define that below.]

The following base software elements are required in the test environment for this Test Plan.

| **Software Element Name** | **Version** | **Type and Other Notes** | **Relevant Iterations** |
| --- | --- | --- | --- |
| Immersive Field Simulator Server | R111.1 version | For hosting IC server components | E1-C1 |
| Immersive Field Simulator Client | R111.1 version | For Testing the client functionalities |  |
| UniSim OTS Server | UCS R520 | To host UniSim Simulation models | C1 |
| Windows Domain Controller | Win 2016 Server 64-bit | To manage IFS users | E1-C1 |

## Test Environment Configurations

The following Test Environment Configurations are required to support the test effort for this project.

General Guidance:

The author of this section updates the specification that includes other Honeywell applications or third party software configurations supported by the current project. Example like capturing third party information like OS version, application like Matlab version, parameter settings etc as different configurations supported for the current release. This section shall be optional for projects where only one configuration is supported and its covered as part of standard installation procedure.

*Refer security* [*COE team room*](http://teams.honeywell.com/sites/HPSCSCoE/default.aspx) *for master data repository to get the information on secuirty setting required to setup test envirnoment. Example SD Elements tool may refer projects which use IIS to this repository for guidelines on secure configuration of IIS.*

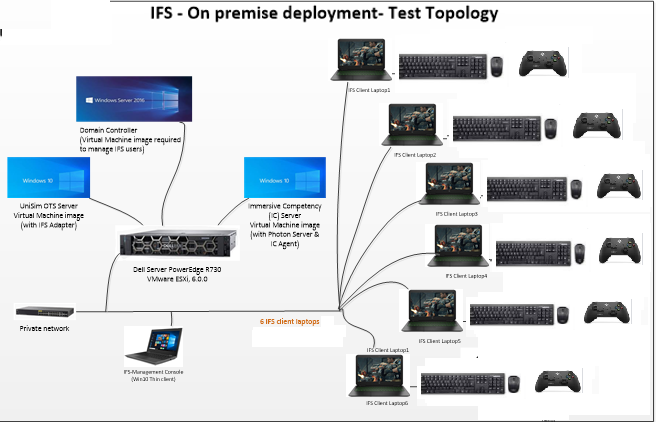
*Ensure that Test beds are on the latest anti virus updates and latest security hot fixes.*

| **Test Bed Specification** | **Relevant Iterations where test bed specification is used for testing** |
| --- | --- |
| Refer IFS test bed topology | E1-C1 |

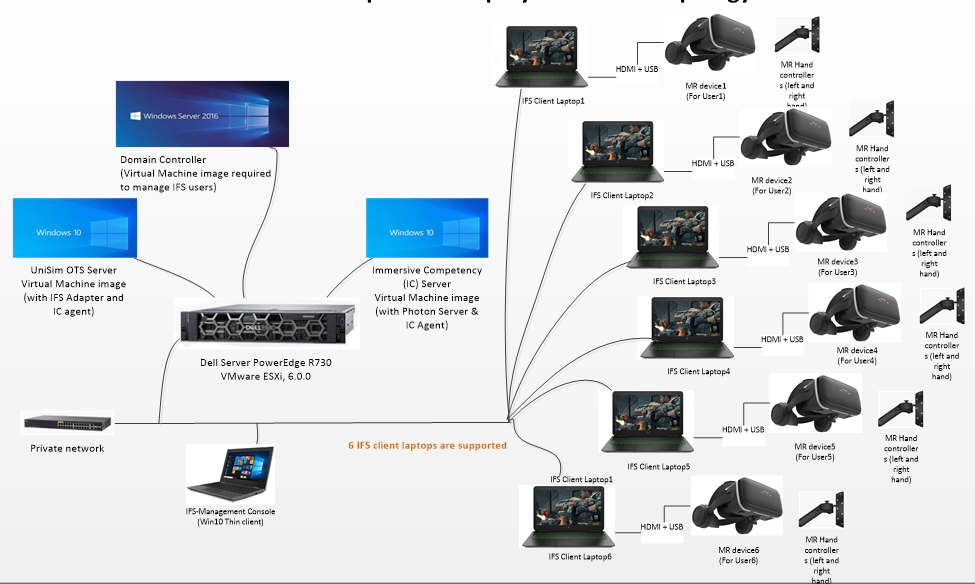
## Topology

The following Test Environment Configurations are required to support the test effort for this project.

**IFS Client App with Keyboard and XBOX controller:**



**IFS Client App with MR controller:**



Guidance:

The author of this document shall either draw or attach a topology diagram of the test bed, reflecting the general types of components involved and their interconnections.

Assumptions, and Constraints

General Guidance:

This section of the Test Plan is the responsibility of the Test Manager, Test Analyst, Test Designer.

Any authors of this document shall list any assumptions made during the development of this test plan that may affect its successful execution if those assumptions are proven incorrect. Assumptions might relate to work that other teams are expected to perform, to expectations that certain aspects of the product or environment are stable, and so forth.

| **Iteration First Recorded** | **Assumption to be proven** | **Impact of Assumption being incorrect** | **Owners** |
| --- | --- | --- | --- |
|  | None |  |  |

Any authors of this document shall list any constraints placed on the test effort that have had a negative effect on the way in which this test plan has been approached.

| **Iteration First Recorded** | **Constraint on** | **Impact Constraint has on test effort** | **Owners** |
| --- | --- | --- | --- |
|  | Test team members will be connected from home over restricted VPN to access IFS servers from the IFS laptops. This poses an additional constraint on the test bed due to network load and related latency which otherwise will not be visible on customer network. The customer OTS network will be a private network with all nodes connected to the same local switch. |  |  |