****

**YAŞAR UNIVERSITY**

**FACULTY OF ENGINEERING**

**DEPARTMENT OF COMPUTER ENGINEERING**

**COMP4920 Senior Design Project 2, Spring 2020**

**Advisor: Gizem Kayar**

**POF: Performance Optimized Fluid System**

**Product Manual**

**Revision 1.0**

**13.04.2020**

**By:**

**Baran Budak, Student ID: 15070001012**

**Cihanser Çalışkan, Student ID: 16070001020**

**İsmail Mekan, Student ID: 15070001048**

# Revision History

|  |  |  |
| --- | --- | --- |
| **Revision** | **Date** | **Explanation** |
| 1.0 | 13.04.2020 | Initial Product Manual |

# Table of Contents

[Revision History 2](#_Toc36726022)

[Table of Contents 3](#_Toc36726023)

[1. Introduction 4](#_Toc36726024)

[2. POF Software Subsystem Implementation 4](#_Toc36726025)

[2.1. Source Code and Executable Organization 4](#_Toc36726027)

[2.2. Software DevelopmentTools 5](#_Toc36726028)

[2.3. Hardware and System Software Platform 5](#_Toc36726029)

[3. XYZAPP Hardware and Software Subsystem Testing 5](#_Toc36726030)

[4. XYZAPP Installation, Configuration and Operation 5](#_Toc36726031)

[References 6](#_Toc36726032)

**List of Figures**

[Fig 1: Use case diagram 5](#_Toc501993332)

[Fig 2: Sequence diagram 7](#_Toc501993333)

**List of Tables**

[Table 1: Description of the use case diagram](#_Toc501993332) 6

**1. Introduction**

The purpose of this product manual is to document the implementation, testing, installation and operation of the POF system as a software product.

The POF system is implemented and tested as it is described in Design Specification Document, Revision 2.0 [2], satisfying the requirements in POF system Requirements Specification Document, Revision 1.0.

Implementation, testing and operation details are given in the following sections of this document.

# 2. POF System Software Subsystem Implementation

This section describes the implementation of the POF system and its subsystems.

# 2.1. Source Code and Executable Organization

* Structure and organization of source code, including related source code filenames. Source code main program/main object, any subprogram/object names together with their methods and interface parameters, including related filenames especially if in different files.
* Structure and organization of executables, main executable and DLL if any, including related filenames.
* Properties and structure of configuration files, if any.
* Description of any scripts to install, diagnose, analyze etc, including related filenames.
* Explanation of diversions from DSD, if any.

Additional Notes About Source Code/Executables Delivery:

* **You MUST NOT list your source code in this Product Manual**.
* Your source code MUST include COMMENTS in a professional manner…!
* Source Code and executables are to be delivered as soft-copy only. Your delivery should also include any log file detailing events related to your execution of software.
* Full source code, executables, test files and log files could be zipped/rar’ed as a **single file**, not **as multiple files**, where filename starts with your project code. You must organize all of your implementation files in a reasonable and self-explanatory directory structure.   
  Example: XYZAPP-Code-2020-05-15-Rev-1.0.
* You will upload the zipped/rar’ed single code file into COMP4920 area in sakai.yasar.edu.tr.

# 2.2. Software Development Tools

In this section, we describe tools that we have used in the POF system project.

***2.2.1 Unity***

Unity 3D version 2018.3.11 (29 Mar, 2019)

***2.2.2 Visual Studio 2017***

***2.2.3 Github***

***2.2.4 Gitkraken***

# 2.3. Hardware and System Software Platform

The minimum specifications of computer hardware are listed below:

* Operating System: Windows 10 (64-bit)
* Processor: Intel Core i7-4700 HQ CPU
* Memory: 16 GB RAM – DDR3L-1600 Mhz
* GPU: NVIDIA GeForce GTX850M 4GB DDR3
* Harddisk: Enough space to set up required programs (?)
* Internet connection is not required.
* D3D11 capable graphics card.
* NVIDIA: GeForce Game Ready Driver 372.90 or above.
* AMD: Radeon Software Version 16.9.1 or above.
* Microsoft Visual Studio 2013 or above.
* G++ 4.6.3 or higher
* CUDA 8.0.44 or higher
* DirectX 11/12 SDK
* Windows 7 (64-bit) or higher
* Unity 3D 2017.3 version or higher

**NVIDIA FleX**

We used NfleX as a third-party software which is created by NVIDIA corporation. Software has extension asset license for Unity. File size is 2.5 Mb. Supports Unity versions 2017.1.0 or higher. First version is released on July 19, 2018. The software operates on Windows or Linux, but it is expected to operate on windows in our project. It requires Unity or Unreal Engine 4 platforms.

# 3. POF System Software Testing

This section must describe how you have tested the correct operation of your software system. It must include:

* Details of module/object-method test cases
* Details of system integration test cases.
* Details of test case logs.
* Amount of effort (time and other hardware and software resources, etc.) spent for testing

Also, clearly specify,

* which parts/functions of your software have been implemented, tested sufficiently and **operating correctly** according to the most recent RSD and DSD,
* which parts/functions of your software have been implemented, tested sufficiently and **NOT operating correctly** according to the most recent RSD and DSD,
* which parts/functions of your software have been implemented but not tested at all,
* which parts/functions of your software **have not been implemented at all**, perhaps left as future work.

# 4. POF system Installation, Configuration and Operation

This section describe how user installs, configures and operates the POF system. Firstly, user must have required system mentioned before.

* All information and instructions regarding the installation and the configuration of the system, including both hardware (if any) and software subsystems. If the system is to be installed and configured by a person with special skills (such as a sysadmin, database admin, network admin, etc., the expected level of expertise (that is, what the admin should know) need also be identified.
* All information and instructions regarding the operation of application, that is the operation of software system functions by an ordinary user. This is in fact the **User Manual**. If a software system has a large number of functions and has complex data, that is a very complex user interface, then such information is given in a separate **User Manual.**
* Snapshots of user interfaces could be provided to help admin/ordinary user operation.
* If your application already supports an extensive online help facility, you may present that help facility in an organized manner in this section.
* All error codes and messages to admins/ordinary users, perhaps with an explanation of the message.

# References

1. Final Report revision 1.0
2. Requirement Specification Document revision 2.0 (RSD 2.0)
3. Design Specification Document revision 2.0 (DSD 2.0)

///////////////////////////////////////////////

1. Reference to organizational design process procedure document(s), or a generic design process procedure document(s)
2. Reference to organizational design product specification document(s), or a generic design product specification document(s)
3. Other references to additional documents, like other internal organizational documents, software project management documents, software design tool documents, etc
4. References to additional bibliographic sources, like professional books, textbooks, handbooks, patents, standards, technical reports, journal/conference papers, etc.

**///////////////////////////////////////////////////////////////////////**

* 1. **Requirements and environment**

ekran görüntüsü içeren bir resim

Açıklama otomatik olarak oluşturuldu

**Figure 1: Nvidia Flex in asset store**

**ekran görüntüsü içeren bir resim

Açıklama otomatik olarak oluşturuldu**

**Figure 2: Nvidia**

After that, Assets->Import Package->Custom Package (figure 1)

Then click,NVIDIA-FleX unitypackage

ekran görüntüsü içeren bir resim

Açıklama otomatik olarak oluşturuldu

ekran görüntüsü, elektronik eşyalar, bilgisayar içeren bir resim

Açıklama otomatik olarak oluşturuldu

**NVIDIA FleX Requirements:**

Windows 7 (64-bit) or newer.

DX11 or CUDA capable graphics cart

Unity 2017.3 or later version