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| Fontys University of applied sciences |
| Design Document |
| Version I |
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Table of Contents

Introduction 3

Class diagram 4

# Introduction

The purpose of this document is to identify the design of our network software system. The system’s structure will be defined using the Unified Modeling Language .

The first chapter will be represented by a class diagram and the description of each class’ members such as fields, properties and methods. The class diagram provides an overview of the software system by describing the classes inside the system and the relationship between them.

Moreover, to have a better understanding of how the objects interract with others in a paricular scenario (use-case), few sequance diagrams will be explained.

# Class diagram

## Description of classes and its members

#### Network

The network class contains a list of components and a list of pipelines. As methods, we have AddCoponent, RemoveComponent, RemovePipeline, AddPipeline, Save, SaveAsand Load.

#### Pipeline

This class contains fields such as Color, to indicate if the pipeline’s flow is critical, StartPoint and EndPoint, Coordinates, CurrentFlow and MaxFlow. It is possible to ChangeFlow, CheckFlow and get some information about the pipeline with the method ToString.

#### Components

Every component has a current flow (property). It’s an abstract class from which the Merge, Splitter, Sink and Pump classes inherit. The class is formed of fields: CurrentFlow, MaxFlow, LocationX an Location Y (the centre of the component – for drawing it on the screen), methods for GetImage, GetLocation, GetTextLocation, IsInFgure, SetCurrentFlow. the center of the component – for drawing it on the screen.

#### Merger

Fields: UpperFlow, LoweFlow, Outcome and methods: CalculateOutput, SwtLowerFlow, SetUpperFlow.

#### Splitter

#### Sink

#### Pump

#### Form