

# Requirements Document

<insert team name here>



Fig. 1: Asus ZenBook Pro Duo

## **Abstract**

This document details our plans to develop an application for companion screen notebooks, more specifically, the ASUS ZenBook Pro Duo. Current applications are not specifically designed or configured for companion screens as two-screen notebooks are just being developed and released. The application that our subgroup will be creating will give the user access to a customised array of buttons for interacting with other applications and the operating system.

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## I. INTRODUCTION

Our team will use the ASUS ZenBook Pro Duo's feature of companion screens to create compatible applications. We are doing this project in cooperation with Intel's AI/Client Software Innovation team. Once the development on the application of choice takes place, we will draw from user tests to measure the compatibility of the app with two screens.

### A. Purpose

The purpose of this project is to design and implement a working application on the ASUS ZenBook Pro Duo that incorporates the companion screen in a creative and usable way. This application's goal is to widen the audience of companion screen notebooks in order to generate more interest in this new emerging technology. The app that we are tasked with creating will let the user customize how they use the second screen display by letting them interact with other apps. This could include having media controls or quick launches for commonly used operations. Some of the specific uses we are developing include user streamers, programmers, and music producers.

### B. Intended Audience and Reading Suggestion

This project focuses on appealing to those who don't think they have a reason to invest in a companion screen notebook. Streamers, or those who use their notebooks for productivity could really benefit from a companion or dual screen notebook, so it's up to us to show them that. It is also intended to give more functionality to those already with a companion screen notebook. A detailed overview of the ASUS ZenBook Pro Duo can be read on [laptopmag.com](http://laptopmag.com) [1].

### C. Project Scope

The scope of our project is to take a pre-existing application and then make it compatible with the companion screen mode. We are responsible and expected to deliver a working prototype by the time the engineering expo comes around in the Spring.

### D. Definitions, Acronyms, and Abbreviations

1) *Companion Screen*: The more accurate terminology for the Asus Zenbook's "dual screen" feature; the second screen (parallel with the keyboard) is much smaller in height, and can be considered as a "companion" to the main screen.

2) *API*: Application Program Interface; APIs will allow us to communicate with applications where we may not have access to the code base.

3) *OLED*: A screen display type that shows vivid colors and deep blacks.

4) *C#*: A high-level programming language that is commonly used in Windows.

5) *IDE*: Integrated Developing Environment; a software application that provides programmers with various tools to develop software

### E. References

[1] S. L. Smith, "Asus ZenBook Pro Duo," LAPTOP, 04-Sep-2019. [Online]. Available: <https://www.laptopmag.com/reviews/laptops/asus-zenbook-pro-duo>. [Accessed: 19-Oct-2019].

## II. OVERALL DESCRIPTION

The overall goal of this product is to give users a new way to interact with their dual screen laptop that can interact with apps they use daily. We plan to do this by focusing in on a couple groups of people and then seeing how we can improve their productivity. Gamers are constantly switching between tabs which could be aided by utilizing the second screen for some of the functionality. Programmers are constantly moving between files, editor, and command window, which could be remedied by using the second screen for additional space. Music producers have to navigate between a large number of buttons that could better laid out on the second screen.

### A. Product Perspective

We will be creating software that will be similar to the El Gato Streamdeck. The stream deck is an external piece of hardware that connects to a computer and provides the user with LCD keys that launch applications and perform keyboard shortcuts. We will be taking this idea and mapping similar functionality to the companion screen on the ZenBook Pro Duo. Our goal for the end of the project is to have this be fully functioning.

### B. Product Functions

Our project will provide the user the ability to map custom functionality to different buttons laid out on the companion screen of the laptop. Letting the user decide what applications, or shortcuts, they want to map to the buttons will increase their productivity and give a new use to the second screen. Basing our project on already existing technology will give users a familiar experience that will be easy to learn and use.

### C. User Classes and Characteristics

There are various different groups of people that can greatly benefit from a Streamdeck.

1) *Streamers*: Due to interacting with various numbers of people online, streamers will undoubtedly benefit from a Streamdeck. In particular, gamers who stream would really appreciate having multiple functions without having to switch tabs manually. For example, if a Twitch streamer were to read any donations, they would not have to switch between their game and their donations list using ALT TAB.

2) *Programmers*: For those who work on developing code, having a second screen would greatly reduce the need to switch between tabs and applications using ALT TAB. This is problematic in Visual Studio and many other IDEs, as a new window would open and hide the editor. With the second screen, there may be a way to transfer the Window output to there while keeping the editor in the main screen, so that users will not have to close the output window every time they compile their program.

3) *Music Producers:* For a music producer more screen space is always helpful and there are many buttons that are used frequently that would be very beneficial to have easily accessible like the record, play, pause, or to open up specific plugins. Because of how a majority of the programs used by music producers called a digital audio workstations the program could easily be set up to work for a majority of these programs easily.

4) *Others:*

#### *D. Operating Environment*

This product will be made for both consumers and professionals to be able to enhance their user experience. Because of this wide range of use cases this product will have to be tested to work in many different environments. This will require the app to be easy enough to understand on first use that any one can incorporate it into their work load. As well as have enough admissibility for professionals to get the most out of it.

#### *E. Design and Implementation Constraints*

The main design goal to keep in mind is the incorporation of the companion screen in our app's functionality. We want to grow the market for dual or companion screen notebooks, so creating an experience that is tailored to a dual screen system is crucial.

#### *F. User Documentation*

Alongside this program, a user will be able to access a pdf that explains the program's functionality in full detail. It is fairly common with downloadable software to include a README of some kind to help a user get acquainted with the software, usually describing common use cases, an FAQ, or other useful information for the user.

#### *G. Assumptions and Dependencies*

This project will assume that users take advantage of the touch capabilities of the companion screen on the ZenBook Pro Duo. If a user wants to turn off the touchscreen capabilities (if they're able to at all), then some of the unique experience may be lost. Another dependency of this project is the use of the Microsoft C# programming language. Since this program will be specifically created with the Windows environment in mind, using C# is a must, since this is the main use case for the programming language.

### III. CHART

#### A. Timeline

