

VISIBLE LIGHT COMMUNICATION

Using **R****G****B** LEDs

CONTENTS

- ▶ Why? / Where?
- ▶ Video
- ▶ Introduction
- ▶ System
- ▶ Protocol
- ▶ Problems
- ▶ Room for Improvement

VLC - with RGB LEDs and Arduino Uno



WHY?

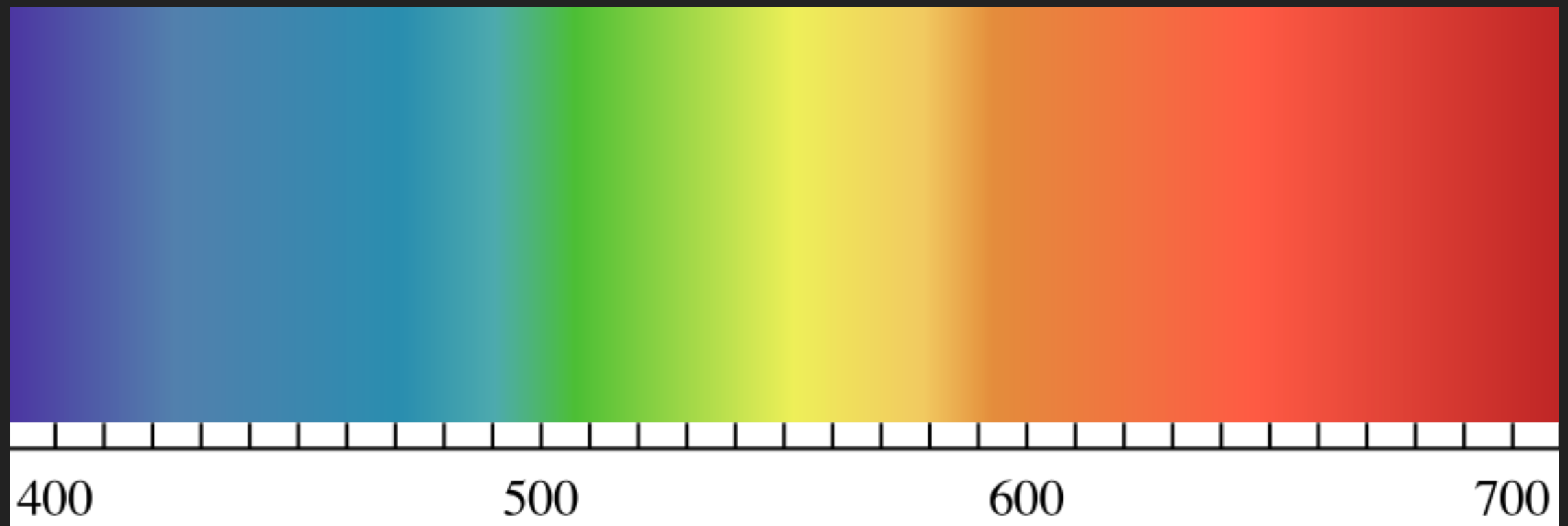
- ▶ Advantages of VLC
- ▶ Rising field

WHERE?

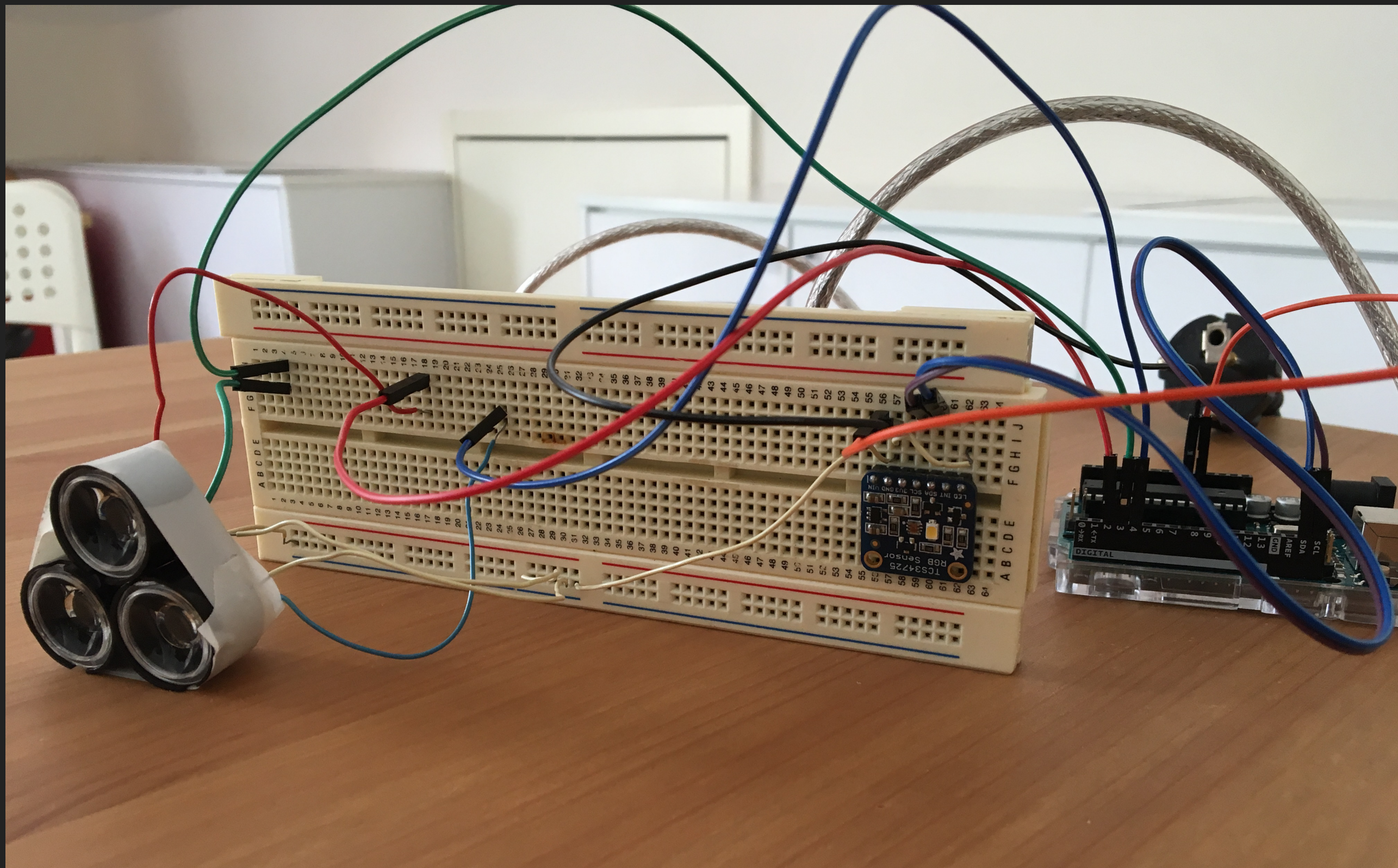
- ▶ Space
- ▶ Military
- ▶ Malls
- ▶ Underwater
- ▶ Home
- ▶ High Security Areas

INTRODUCTION

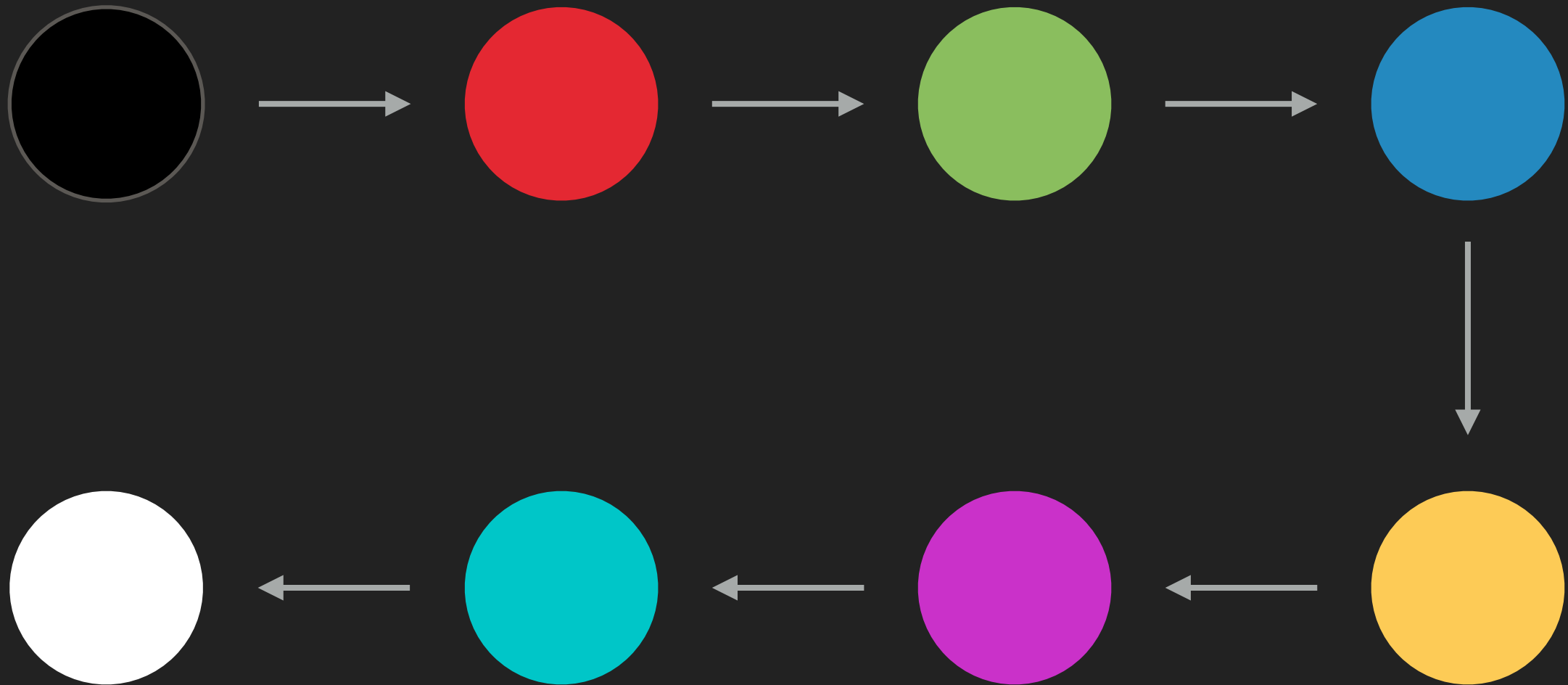
- ▶ 1880 - Photophone
- ▶ 2003 - Recent Works
- ▶ Visible Light



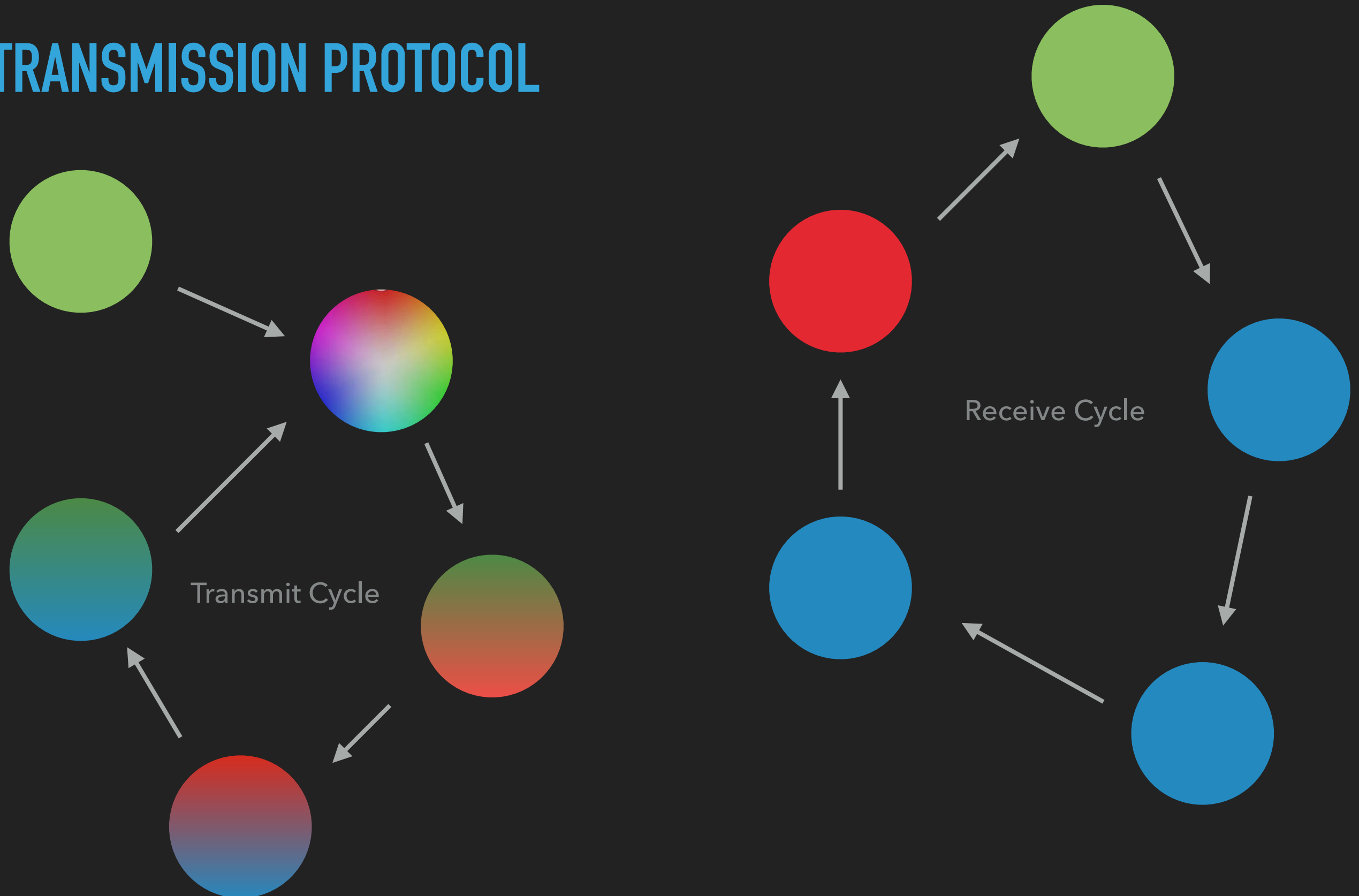
SYSTEM (HARDWARE)



CALIBRATION PROTOCOL



TRANSMISSION PROTOCOL



PROBLEMS

- ▶ Calibration Process
- ▶ Noise
- ▶ Broken wires

ROOM FOR IMPROVEMENT

- ▶ Better Hardware
- ▶ Better Error Coding
- ▶ Autonomous calibration
- ▶ Driver (Unicode, file share etc.) + UI
- ▶ Laser + Targeting ?

Thank You for Listening

- ▶ Yigit Suoglu
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- ▶ Baran Dereli
- ▶ Musab Cevik
- ▶ Onur Calik