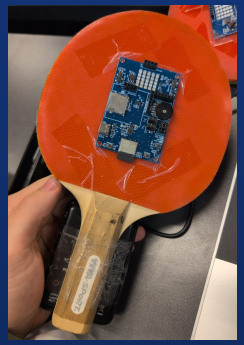
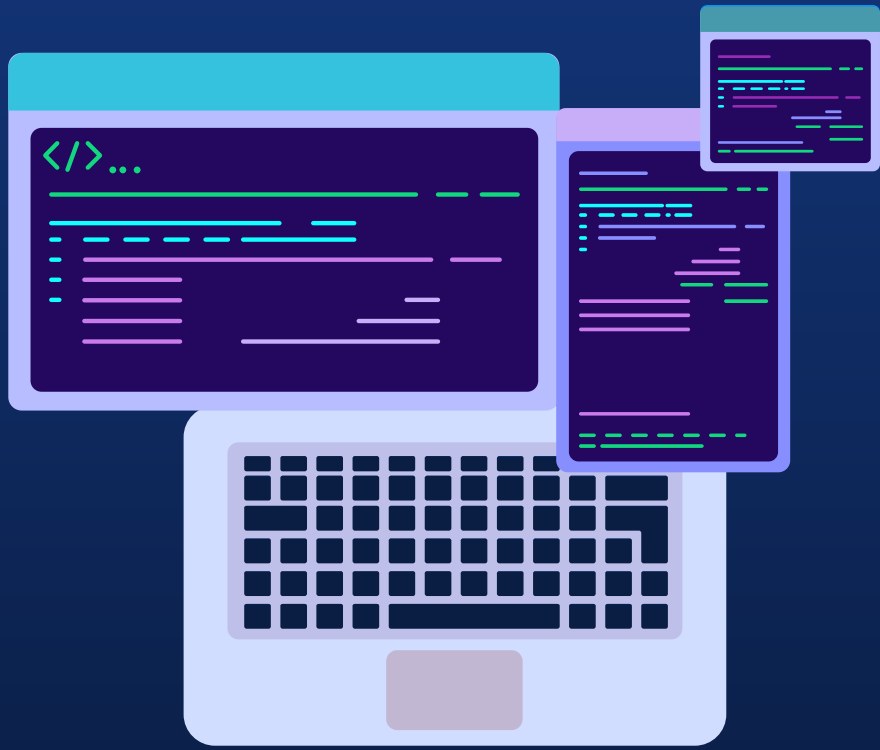




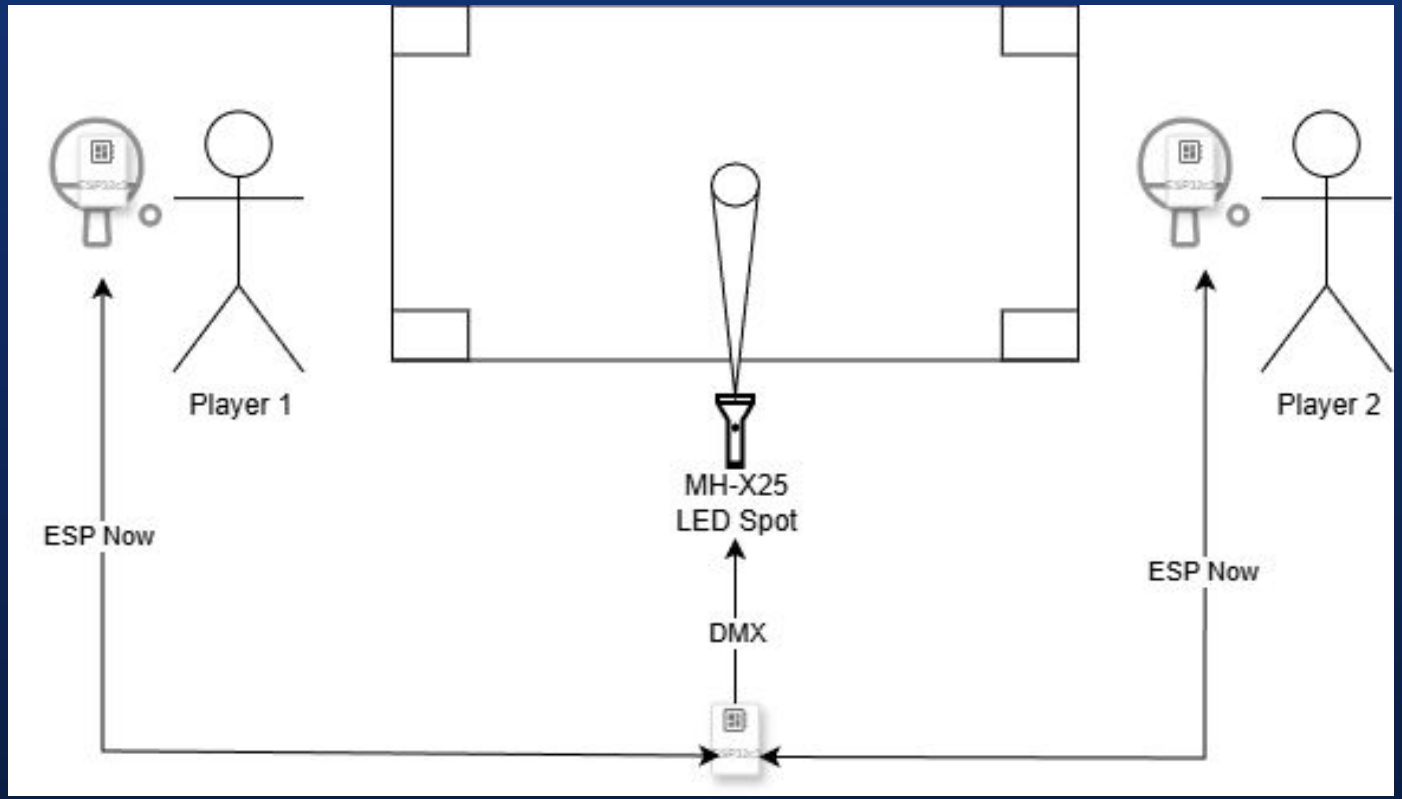
Light Pong

Matthias Hefel
Elias Sohm

Das Team

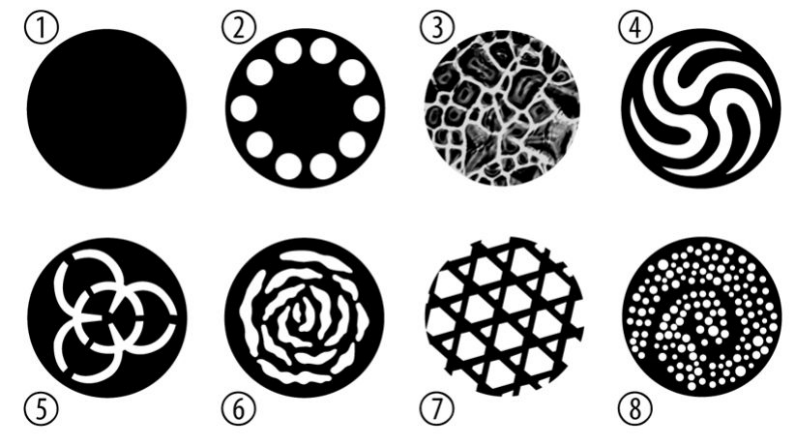
Tischtennis Mit Licht

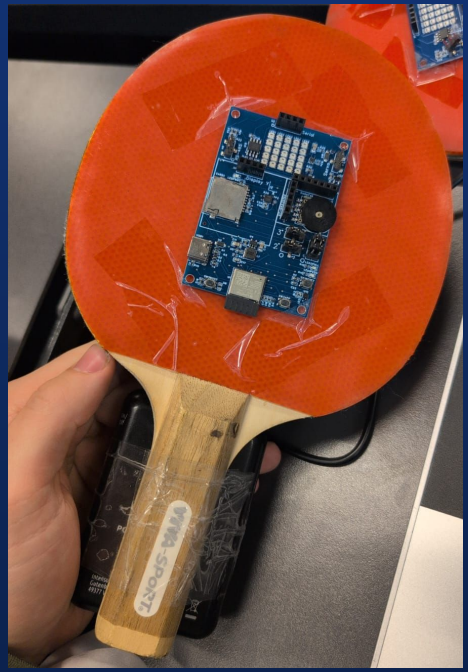
Architektur



Features

- Automatische Client-Registrierung ESP-NOW
- Punktestand (0 - 9)
- Gewinner
- Feuerball mit Cooldown





Software Architektur

Schläger

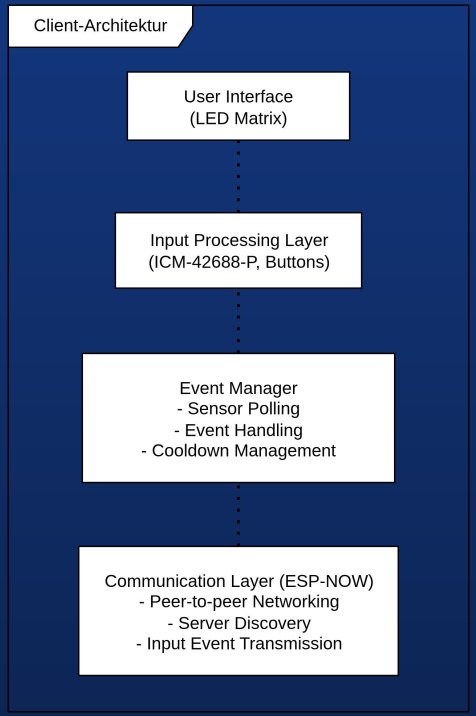
- ICM-42688-P via SPI
- LED Matrix
- Buttons

Server

- DMX
- MH_X25
- Game Logic
- Animations

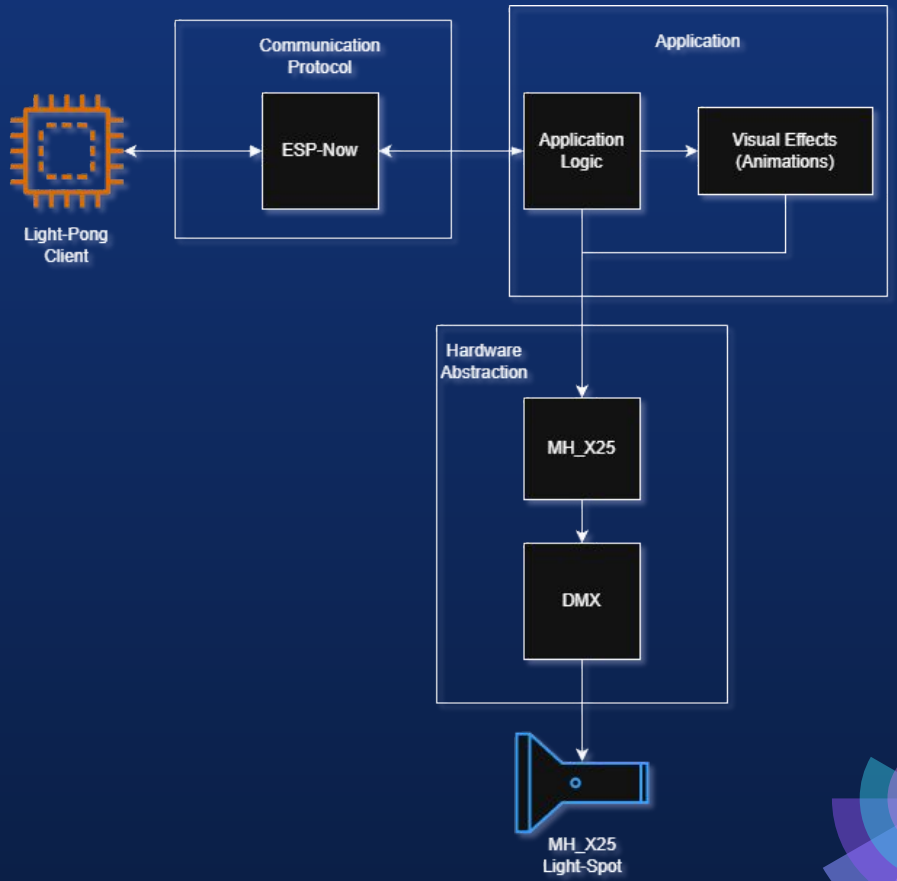
Client-Software-Architektur

- **Modular Component-Based Design** - organisiert in Komponenten die ICM-42688-P, LED Matrix, Buttons und die Kommunikation via ESP-NOW handeln.
- **Wireless ESP-NOW Networking Layer** - peer-to-peer Kommunikation mit Server-Discovery und Übertragung von Input Events.
- **Multi-Sensor Input Processing** - Integration mehrer Inputs via ICM und Buttons.
- **Real-Time Visual Feedback** - über LED Matrix.

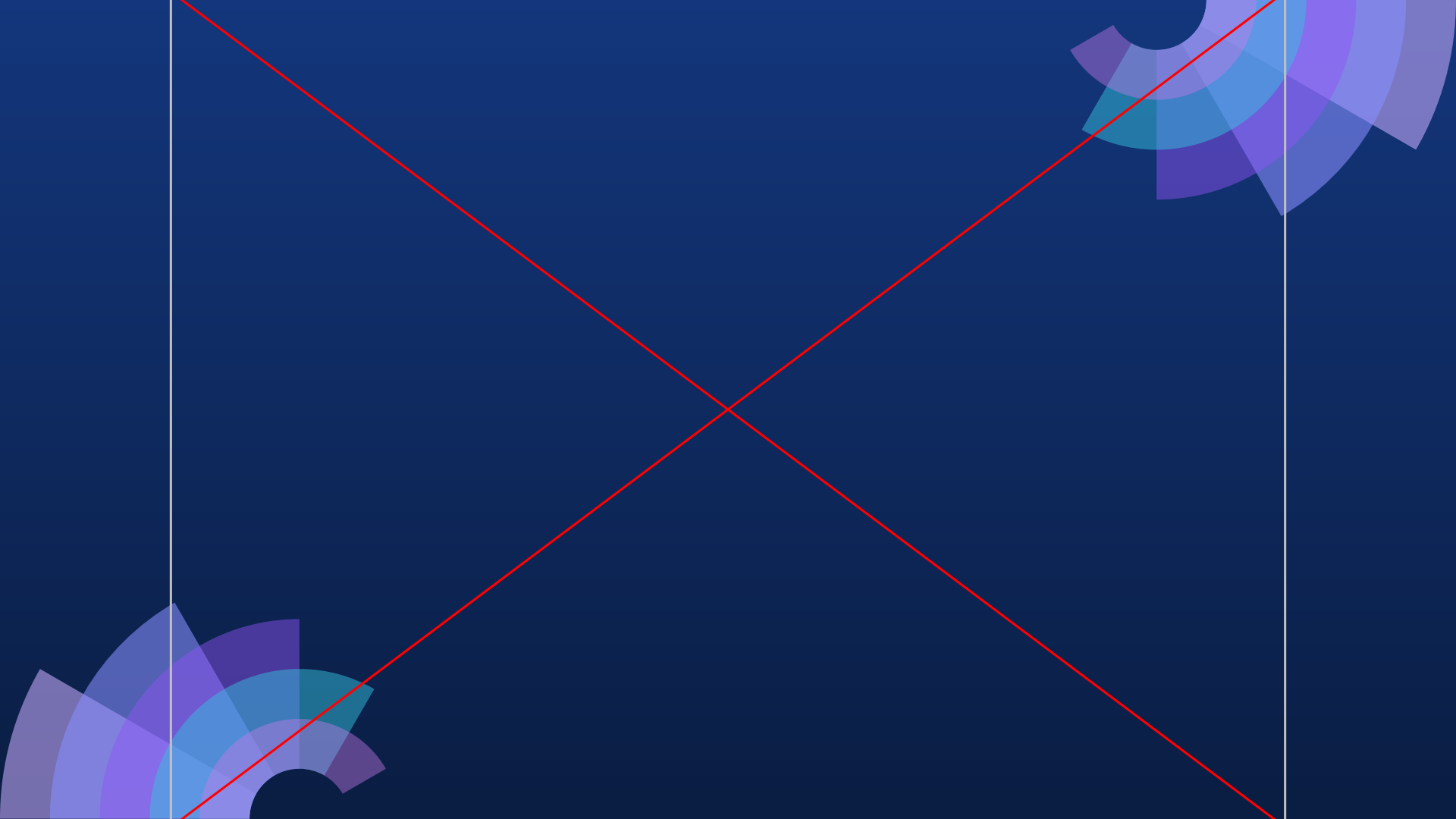


Server-Software-Architektur

- **Layered Architecture**
  - Hardware
  - Device
  - Effects
  - Game-Logic
- **ESP-NOW Server** - Dynamic Discovery, Player Assignment, Score Broadcasting
- **FreeRTOS Multi-Tasking**
  - ESP-Now Communication
  - Game-Loop
  - DMX
- **DMX512 Lighting Control**
- **Game State Machine**



LIVE DEMO



Dankschön!

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