



Component overview for the Bluebird Data Physicalization Prototype

The Bluebird project entails the creation of a tangible data visualization for the Lab42 building, utilizing environmental IAQ sensor data to facilitate Human Building-Interaction. Part of the Thesis and Graduation project for the Master of Science (MSc) in Information Studies (Information Systems track), created by part-time student Danny de Vries at the University of Amsterdam.

This document offers an outline of the expenses incurred for hardware components necessary for the prototype's development. Additionally, it presents an inventory of components already possessed by the researcher, intended for a transparent declaration of these costs within the budget allocated by the Digital Interactions Lab.

The invoices of all these components are included at the bottom of the document after the cost breakdown. All other hardware components and tools that are not part of this document were already in possession of the researcher.

The paper itself with impressions and photographs of the prototype and the models and firmware used for the physicalization can be found on GitHub under the Vizslab organization: <https://github.com/vizslab>.

Thesis Project

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Project: Master Thesis (IS)

University: University of Amsterdam (UvA)

Master: Information Studies Information Systems (track)

Institute: Informatics Institute

Faculty: Faculty of Science (FNWI)

Research Group: Digital Interactions Lab (DIL)

Supervisor(s): Dr. H. (Hamed) Seiiied Alavi PhD & Shruti Rao Ph.D. Candidate

Cost Breakdown

Total incurred costs for this project for declaration: €59.98

Total costs:

- Costs for electronics: **€27.25**
- Costs for hardware: **€37.73**

Costs for the Electronics

User for creation of the controller device and string pull up/down mechanism.

- 1x (A) 16-channel I2C PWM-Servo Controller (PCA9685) €6.10 (A)
- 7x Mini Servo (MG90S) Digital (360 continuous degrees) €17.57 (B)
- 10x 500mm servo extension cables €3.59 (C)

Costs for Manufacturing

The filament was used for mounting plates, and pulleys, and attached to the wooden MDF board.

- 1x PLA spool filament yellow/green gradient: €24.99 (D)
- 1x Dark green paracord 4mm: €1.49 (E)
- 1x Light green paracord 3mm: €1.38 (E)
- 1x Woven jute rope 3mm: €0.99 (E)
- 1x 122x61cm Wooden MDF board (cut to length) €6.29 (F)
- 1x Mounting Kit white 290ml €2.59 (F)

Invoices