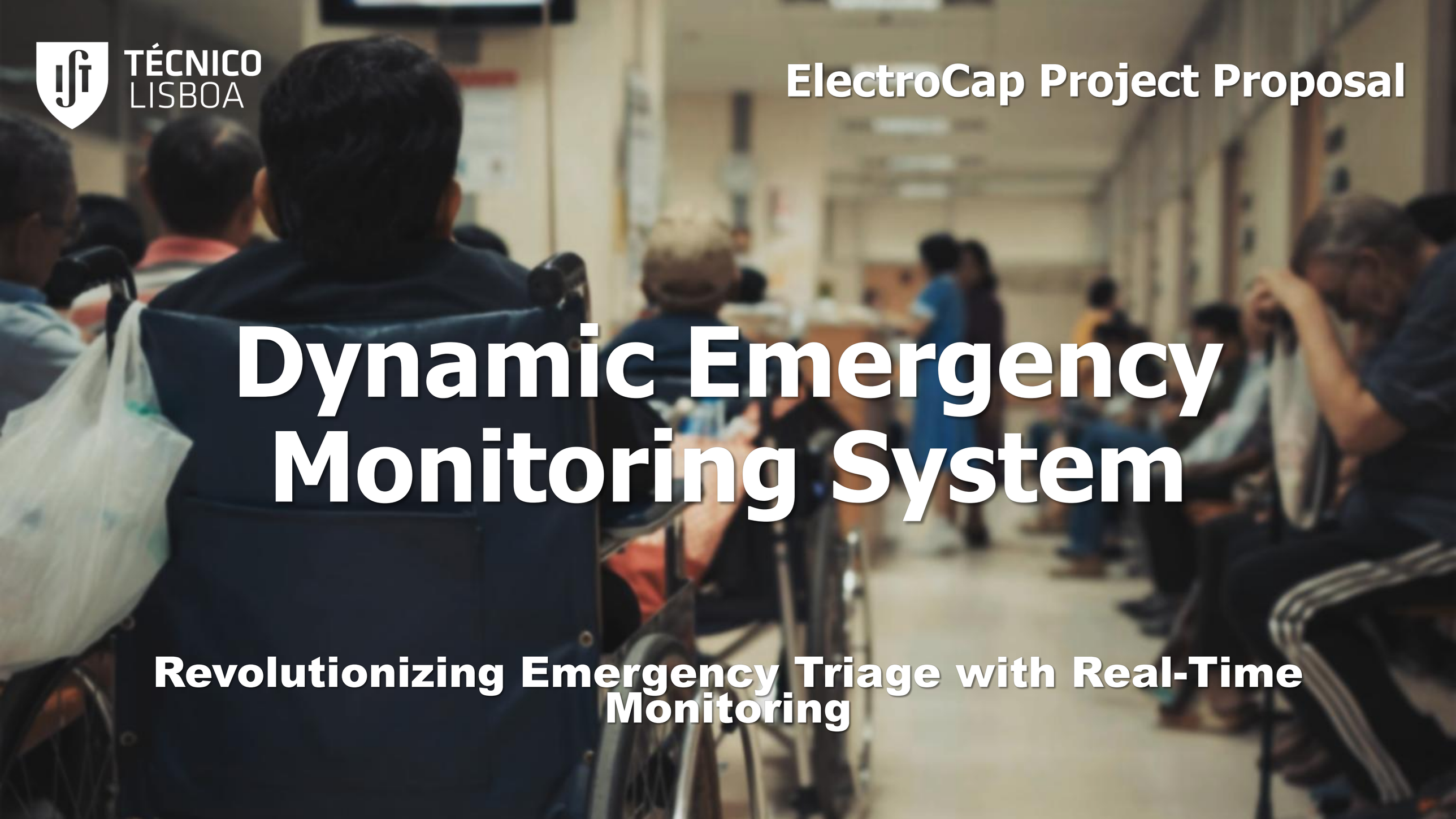


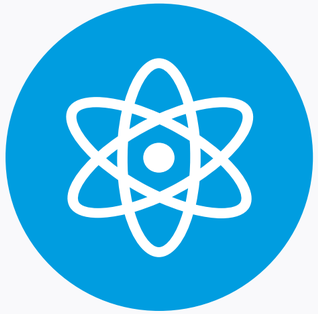
TÉCNICO LISBOA

ElectroCap Project Proposal

# Dynamic Emergency Monitoring System

## Revolutionizing Emergency Triage with Real-Time Monitoring

# 1. Advisors and Mentor



Scientific Advisor:
**Prof. Teresa Vazão**

Scientific Co-advisor:
**Dr. Rui Tato Marinho**

Coordinator: —

Mentor:
**Dr. João Gouveia**

## Emergency Triage is Failing

# Patients Are at Risk

**“66-year-old man found dead in the emergency room of Coimbra Hospital after waiting 12 hours” (DN, 2024)**

**“Regulator says hospital “did not monitor” elderly woman who died in the emergency room” (Observador, 2024)**

**“Évora Hospital confirms death of user in the emergency service urgency” (Expresso, 2023)**

# 2. Problem

🖥️ Manual triage systems are **outdated** and **static**.

⚠️ Critical patients can **deteriorate unnoticed**.

📉 Healthcare staff are **overwhelmed** and **resources misallocated**.


“ it’s time for health facilities to embrace new patient monitoring technologies to support them in caring for patients” (O’Malley, T. , 2020)

# 3. Technological solution

Stage 1

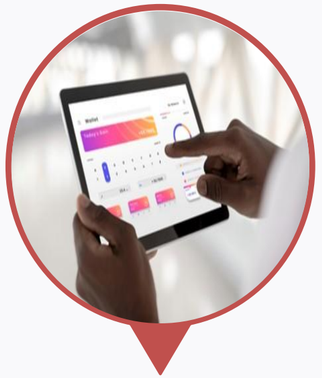
**Registration & Triage**

Stage 2

**Patient with wearable**

Stage 3

**Server/Data processing**



Stage 4

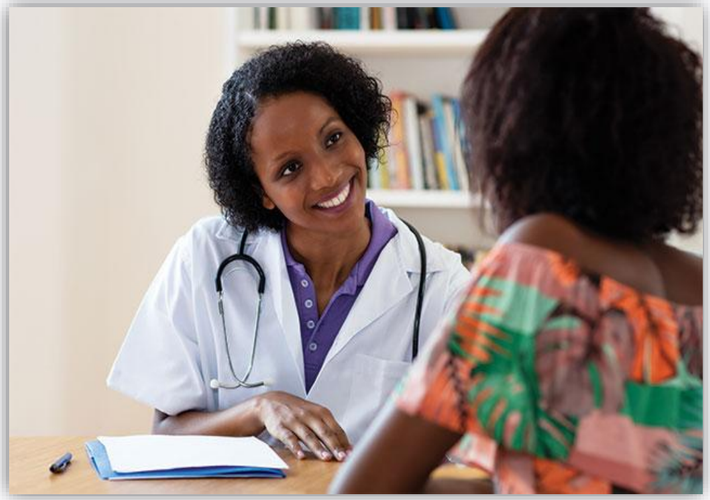
**Data Access (Dashboard)**

Stage 5

**Medical Decision**

# 4. Solution beneficiaries

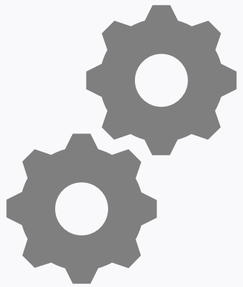
**Patients in emergency room**



**Healthcare providers**

**Families and caregivers**

# 5. Solution requirements



**Real-Time Vital Sign Measurement**

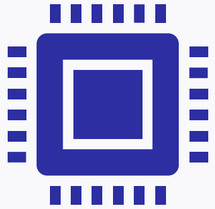
**Low Latency Alerts**

**Usability and Comfort**

**Scalability and Cost-Efficiency**

# 6. Technical challenges

**Sensor Accuracy and Reliability**



**Real-Time Data Processing**

**Connectivity Issues**

**Dynamic Alert Algorithm**

**Regulatory compliance**

# 7. Testing and validation metrics

# 8. Partners

**Santa Maria Local Health Unit**

**Engagement with Healthcare Providers**

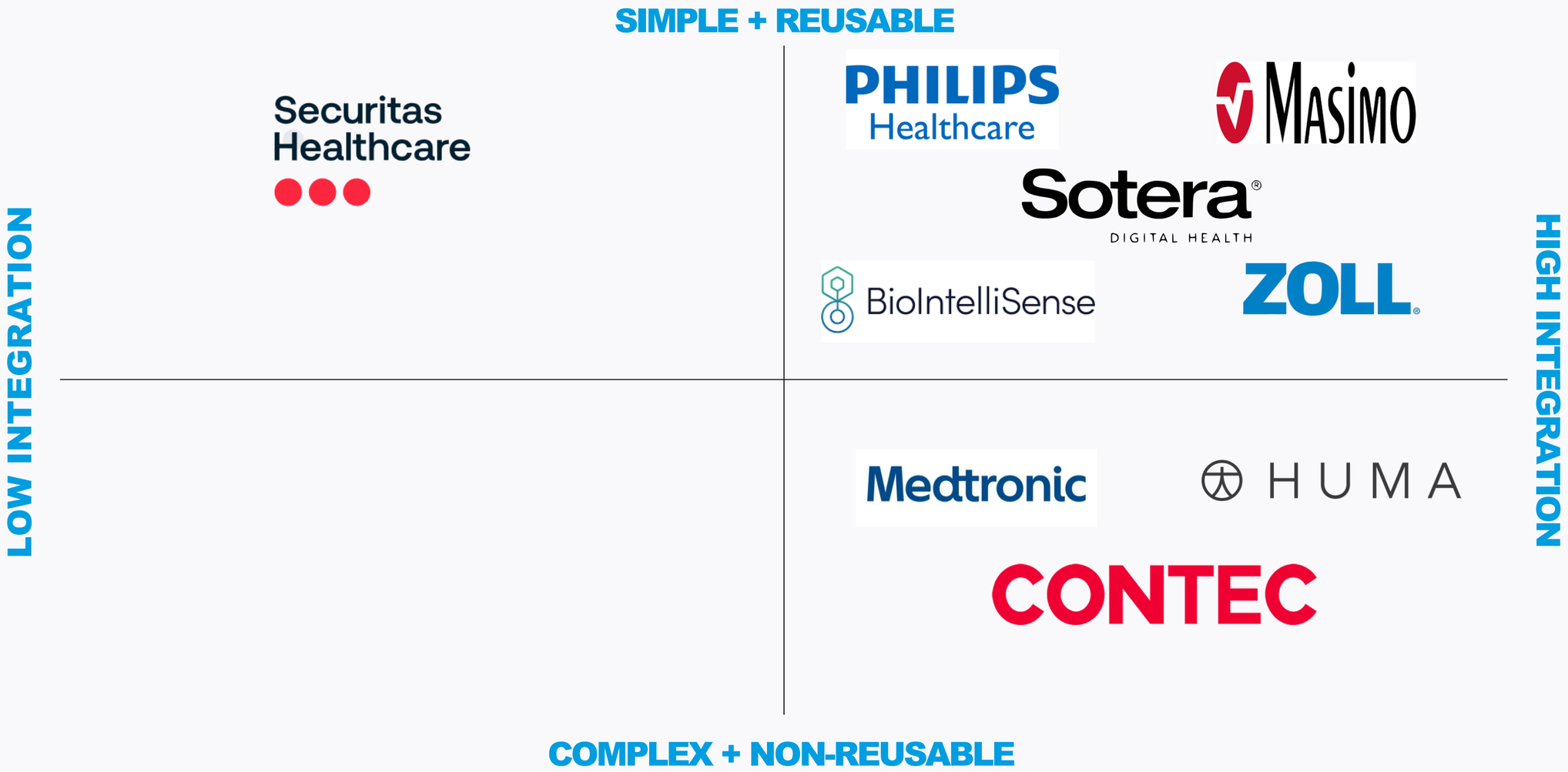
**Testing in Real-life Scenarios**


UNIDADE LOCAL DE SAÚDE
SANTA MARIA

# 9. Current solutions and previous work

- Traditional triage systems
- ICU monitoring systems
- Wearable devices(smartwatches)
- CEIIA 2.0 project
- Real-Time Monitoring Electronic Triage Tag System


# 10. Competitors



# 11. Team

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**João Veríssimo**

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**Marco Matos**

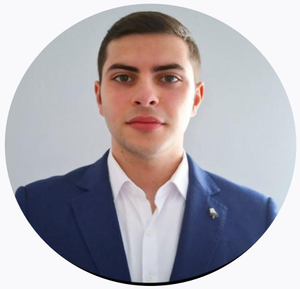
**105932**

**Tomás Modesto**

**105944**

**João Ferreira**

**106081**



**Gustavo Zacarias**

**106128**

# 12. Division of labor (I)

| João Veríssimo | Filipe Esteves | Marco Matos |
|---|---|---|
| **Research/ Interviews** | **Bracelet(S)** | **Algorithms** |
| Bracelet (S) | Server & Comms | **Server & Comms** |
| App | Website | Bracelet (H) |
| Algorithms | Research | Research |

H – Hardware | S – Software | Comms – Communications

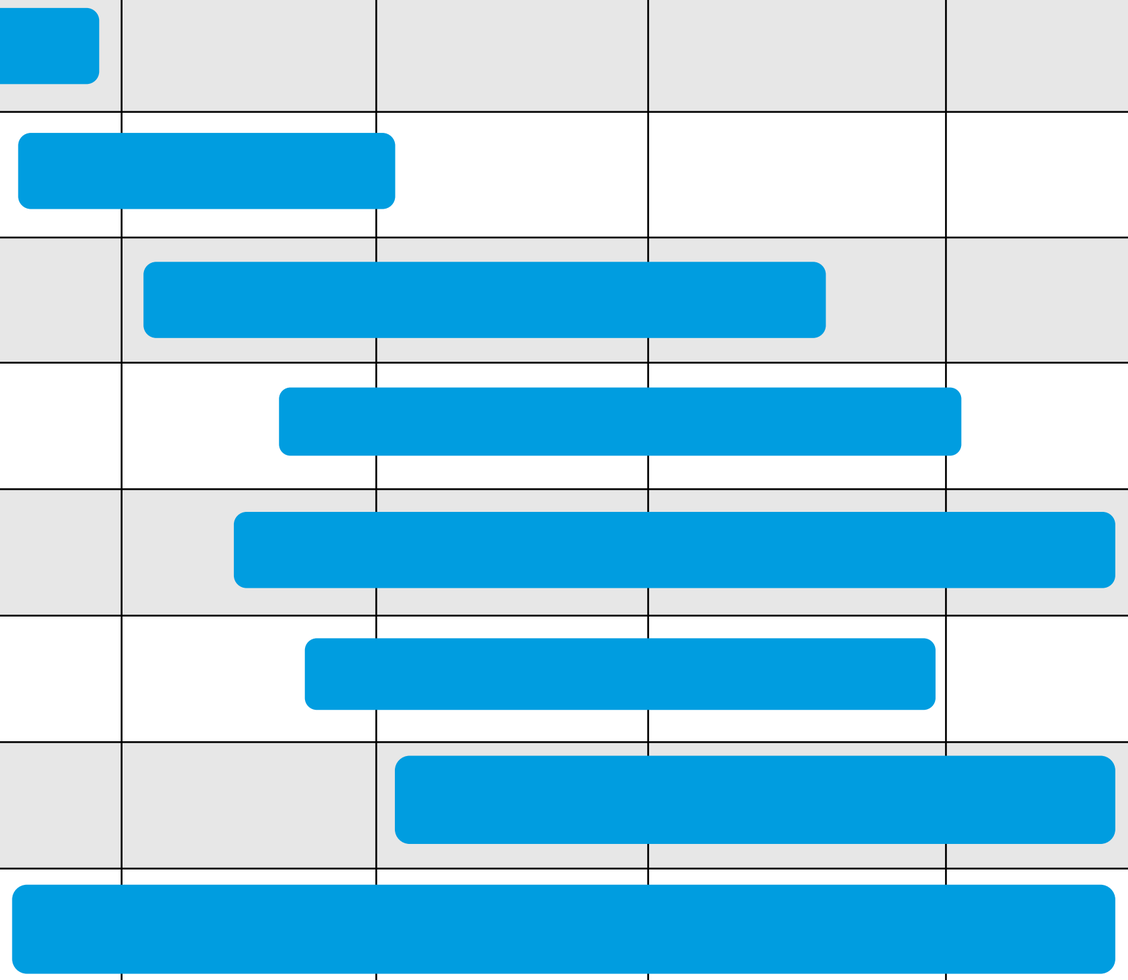
# 13. Division of labor (II)

| Tomás Modesto | João Ferreira | Gustavo Zacarias |
|---|---|---|
| **Bracelet (H)** | **App** | **Website** |
| App | Server & Comms | Algorithms |
| Research | Bracelet (H) | App |
| Bracelet (S) | Research | Research |

H – Hardware | S – Software | Comms – Communications

# 14. Schedule

| Tasks by field \ Months | Feb | Mar | Apr | May | Jun | July |
|---|---|---|---|---|---|---|
| Proposal | | | | | | |
| Research/Interviews | | | | | | |
| Bracelet (Hardware) | | | | | | |
| Bracelet (Software) | | | | | | |
| Algorithms | | | | | | |
| Server | | | | | | |
| App | | | | | | |
| Website & Blog | | | | | | |



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# Thank you

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