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VITA

EletroCap

VITA - Visually Impaired Transit Assistant

Pitch Deck

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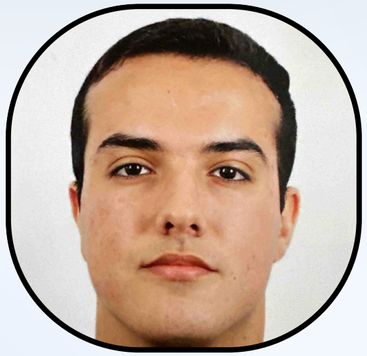
Our Team



Alexandre Escudeiro

Diogo Martins

Gonçalo Alexandre

Miguel Silva

Ricardo Gaspar

Rodrigo Branco

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Advisors and Mentors

Teresa Vazão

Scientific Advisor

Luis Caldas

Coordinator

Gerson Ferreira

Mentor

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The Problem

Transit Accessibility

People with visual or cognitive disabilities often struggle to identify the correct bus to board.

Announcement Barriers

Relying on visual signage or inconsistent manual announcements can make public transport inaccessible to these individuals.

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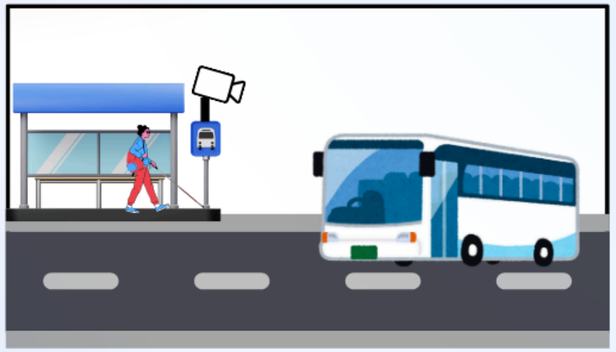
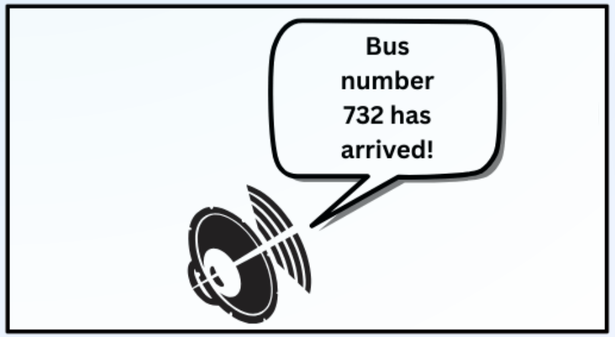
Our solution

Passive funcionality of the system

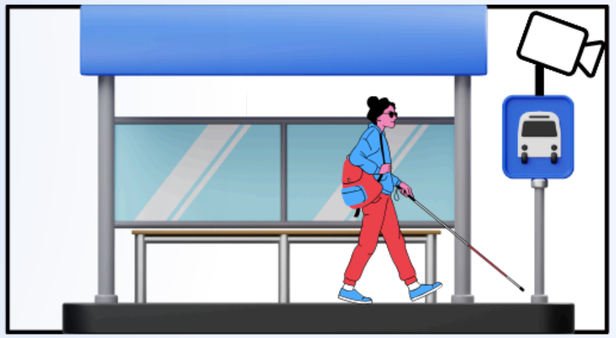


System detects a bus

(for example, bus 732)

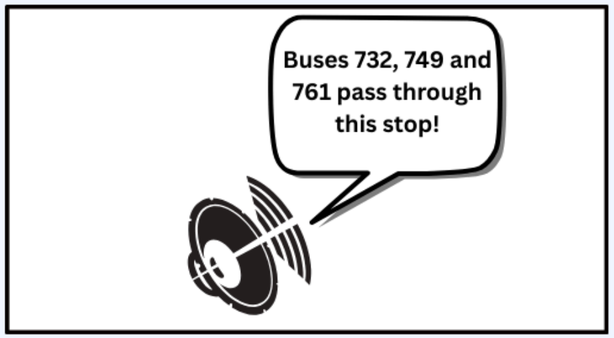


Active funcionality of the system



User engages with the system, pressing its button

(for example, the buses 732, 749 and 761 pass through this bus stop)



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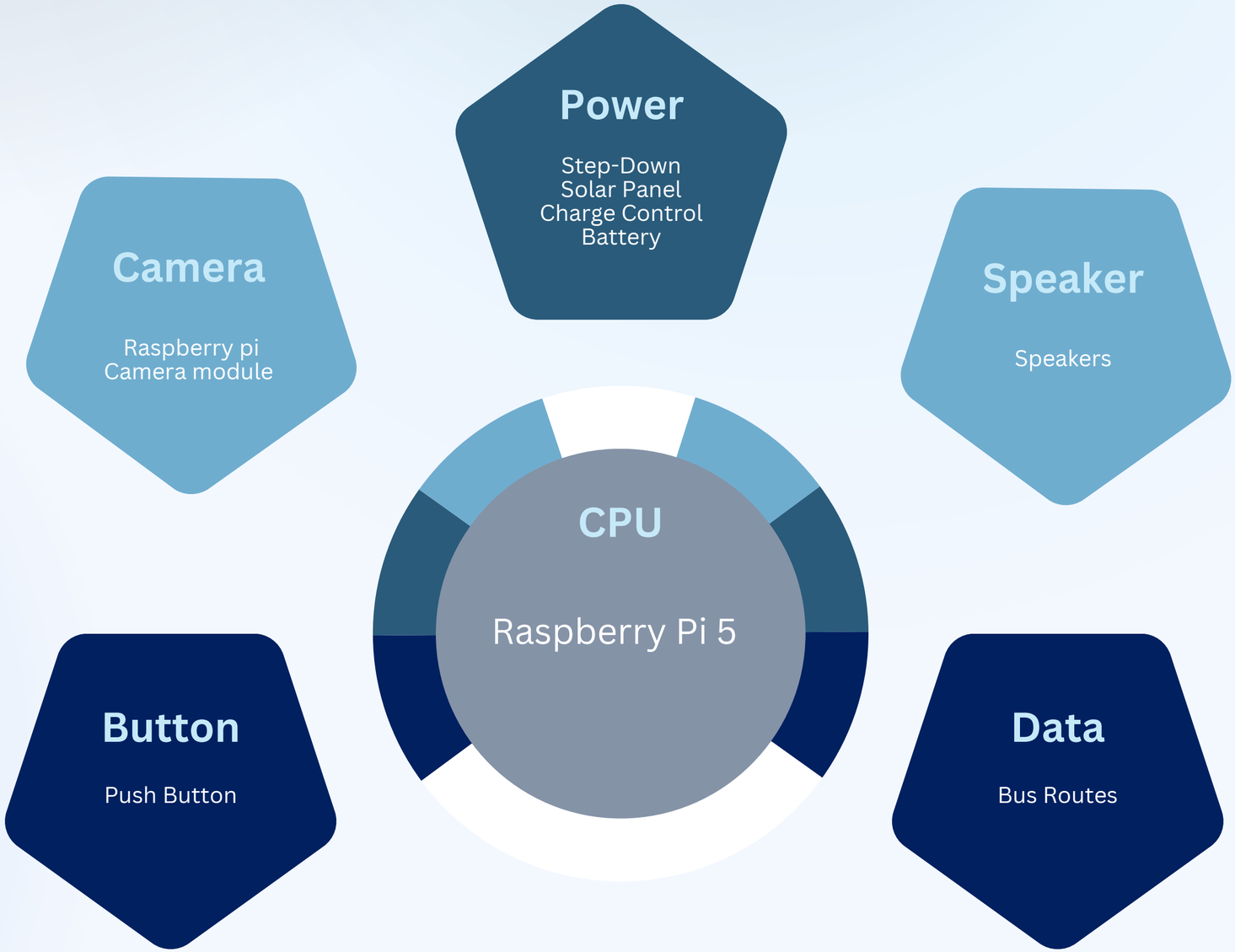

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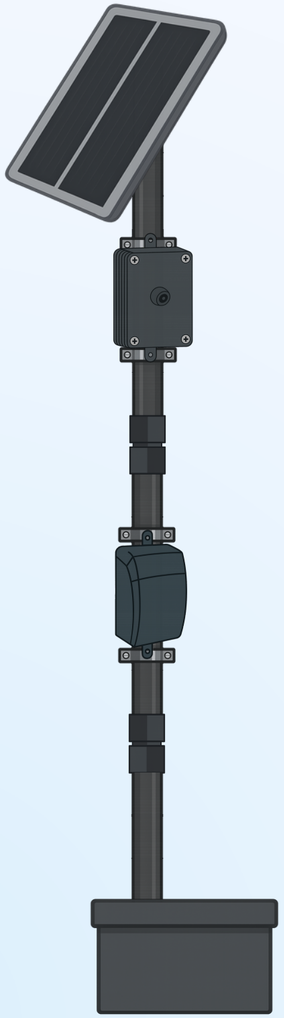
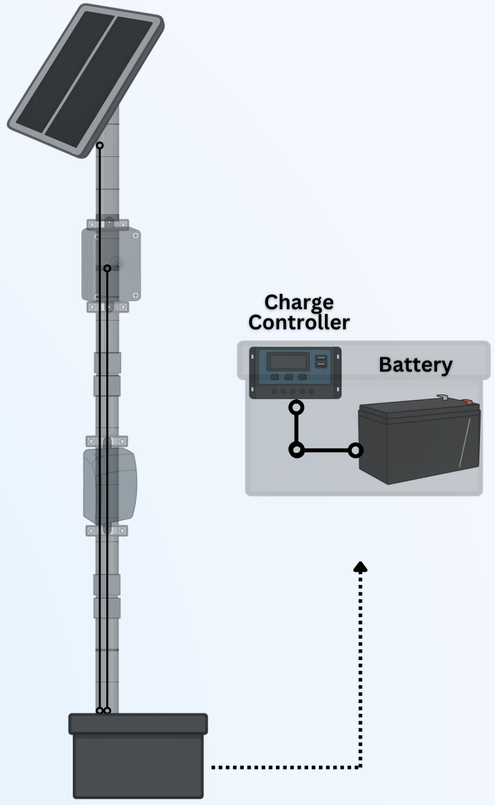
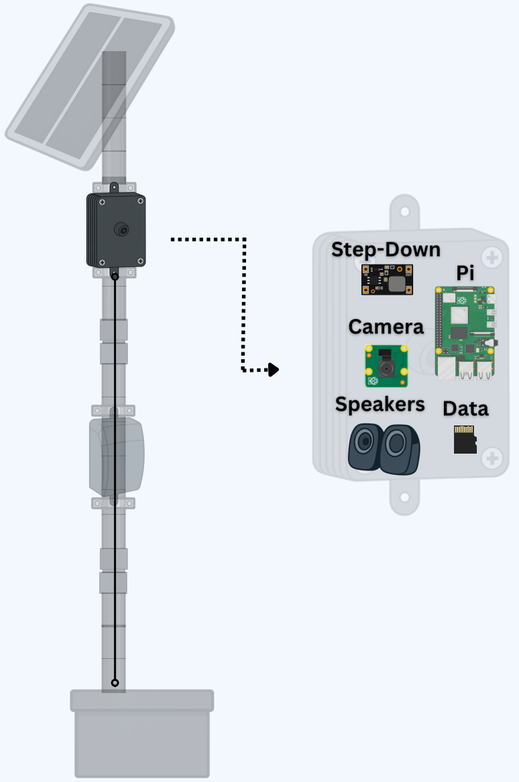
Prototype



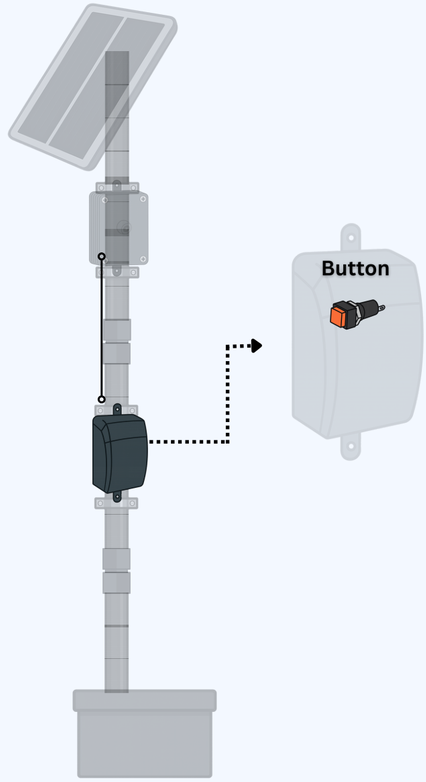
Power



Camera



Button



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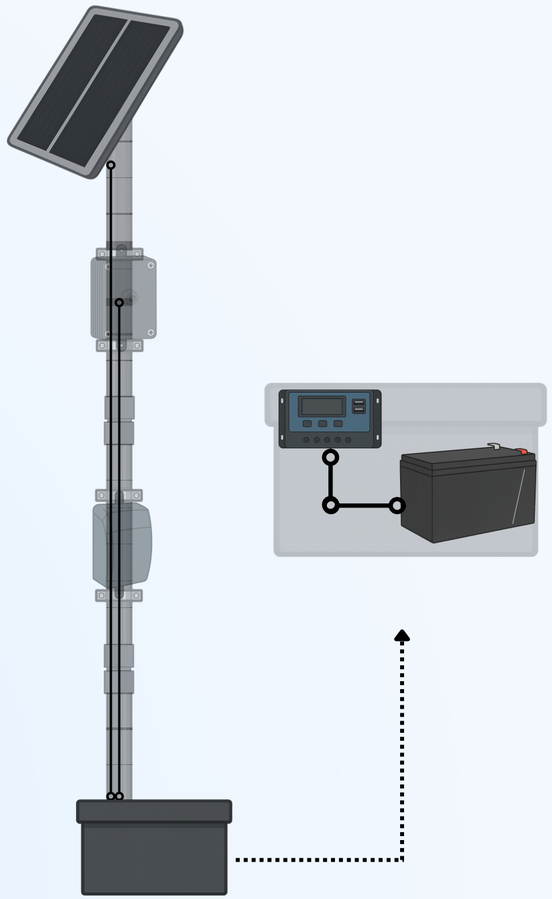
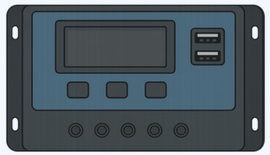
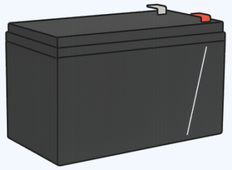
Sistema eletricamente sustentável



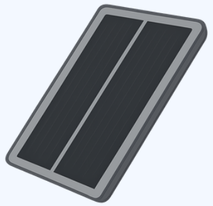
Charge Controller



Battery



Solar Panel



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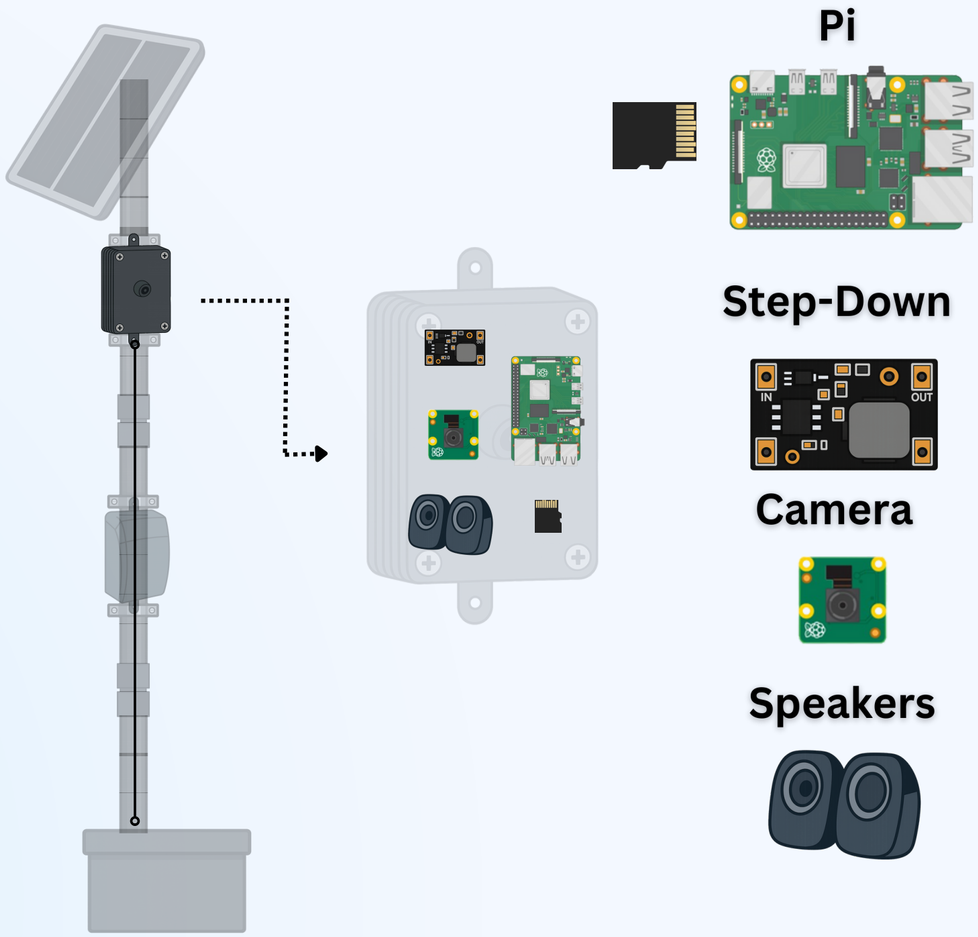
Reconhecimento de imagem



Pi

Step-Down

Camera

Speakers

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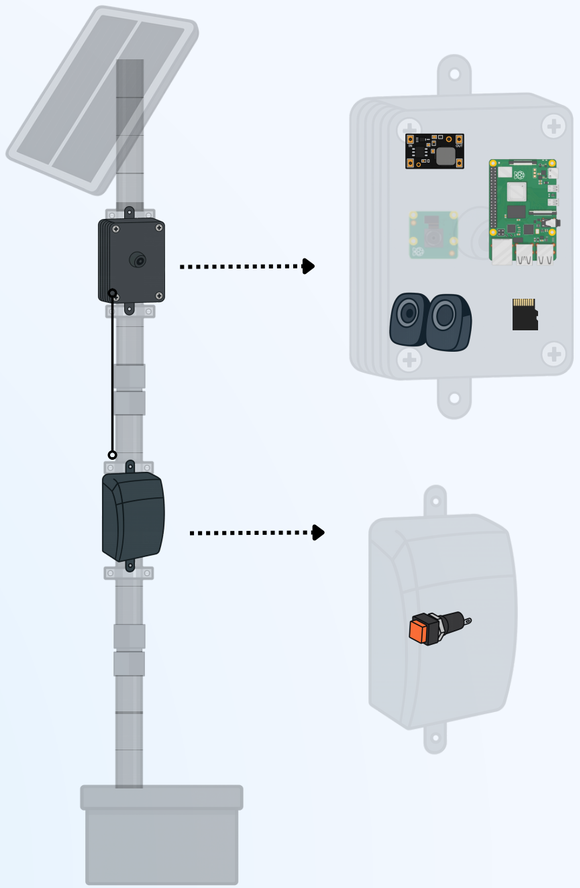
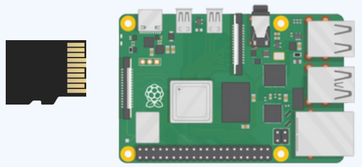
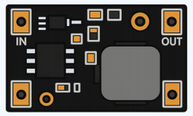
Sistema TTS Carreiras



Pi

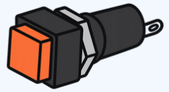


Step-Down



Speakers

Button



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Solution Beneficiaries

Visually Impaired Passengers

Improved accessibility with automatic bus detection and audio guidance.

Public Transit System

Increased inclusivity and a more user-friendly experience for all passengers.

Community

Greater independence for visually impaired individuals, fostering social inclusion.

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Existing Solutions

Features	*VITA*	*See Me App*	*AssistiveTravel*	*Real Leaders App*
Form Factor	Info Box	Mobile App	Mobile App	Mobile App
Text Recognition	✓	✓	✓	✓
Audio Feedback	✓	✓	✓	✓
Vibration Feedback	✗	✓	✓	✓
Interface	Physical button that results in audio messge	GPS and Bluetooth to track vehicles	Public transportation systems integration	A.I for extra navegation features
Price (€)	Public infrastructure	Free	Paid (depends on location)	Free

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Solution Requirements

- Accurate Bus Detection
- Accessible Interface
- Clear Audio Announcements
- Seamless Integration
- Resistance to adverse conditions

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Partners

Associação dos Cegos e Amblíopes de Portugal

ACAPO

ASSOCIAÇÃO DOS CEGOS E AMBLÍOPES DE PORTUGAL

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Testing and validation metrics

Early stages of development	Later stages of development
Ensuring correct recognition of bus ID	Testing with partners
Functional power supply and cooling system	Real-life bus recognition
Functional communication through the whole system	Testing all prototype funcionalities

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Tasks

Miguel Silva

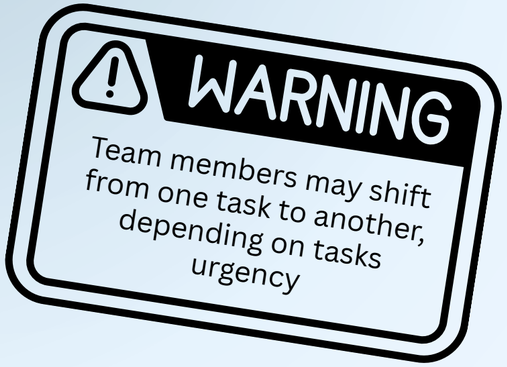
- Prototype
- Design and 3D modeling
- Pitch Deck
- Communication with partners

Alexandre Escudeiro

- Image recognition algorithms
- OCR Development and testing
- Blog posts
- Pitch Deck

Diogo Martins

- Website and blog development / posts
- Promotional video
- Pitch Deck and EletroDay poster
- Communication with partners



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Tasks

Ricardo Gaspar

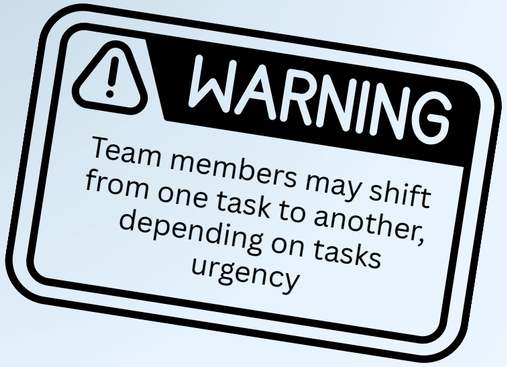
- Prototype
- Prototype setup and modeling
- Speaker / Text-to-speech
- Design and 3D modeling

Gonçalo Alexandre

- Image recognition algorithms
- OCR Development and testing
- Pitch Deck
- EletroDay poster

Rodrigo Branco

- Marketing Materials
- EletroDay Poster
- Pitch Deck
- Promotional video



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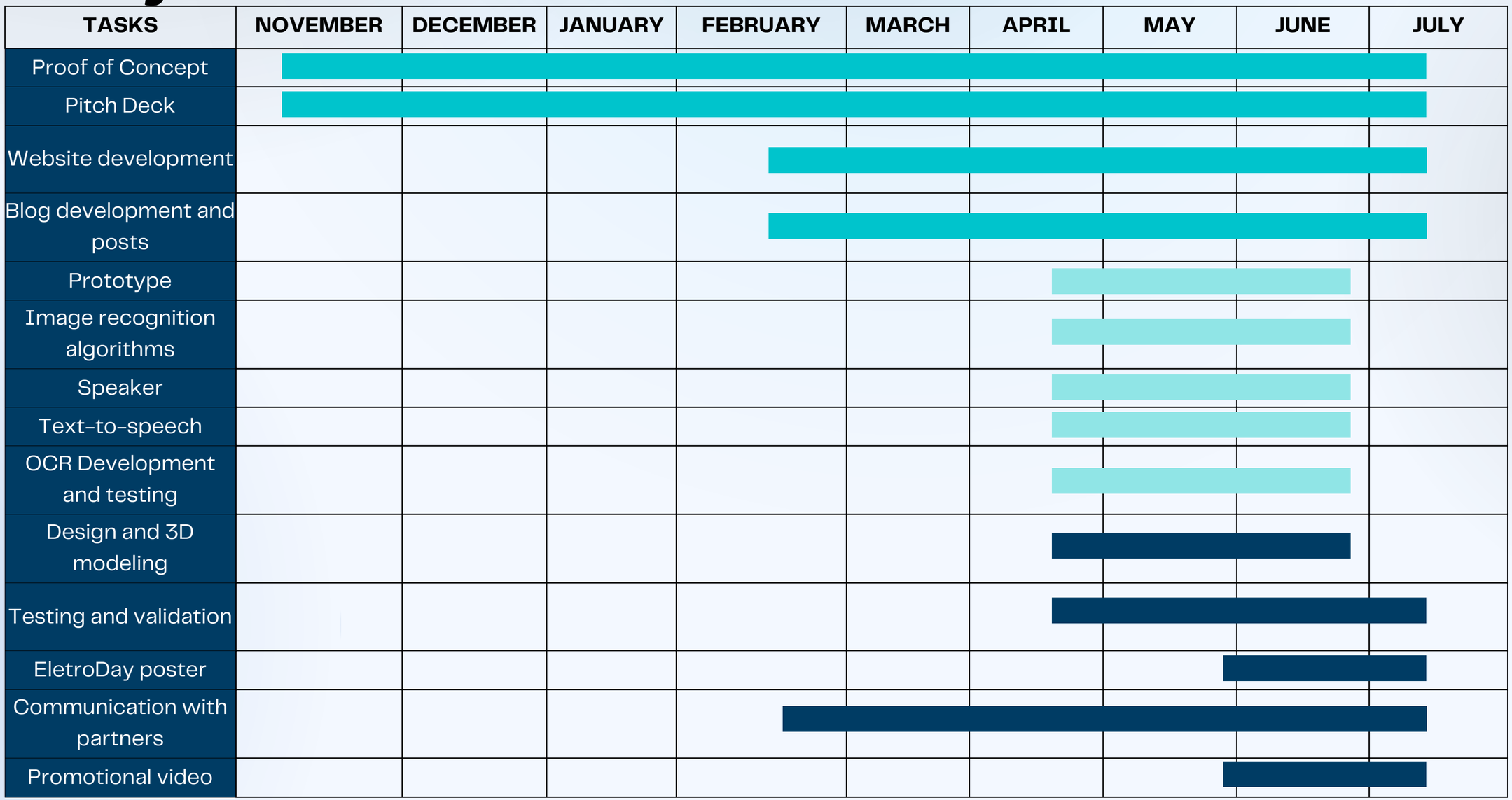
Project Timeline



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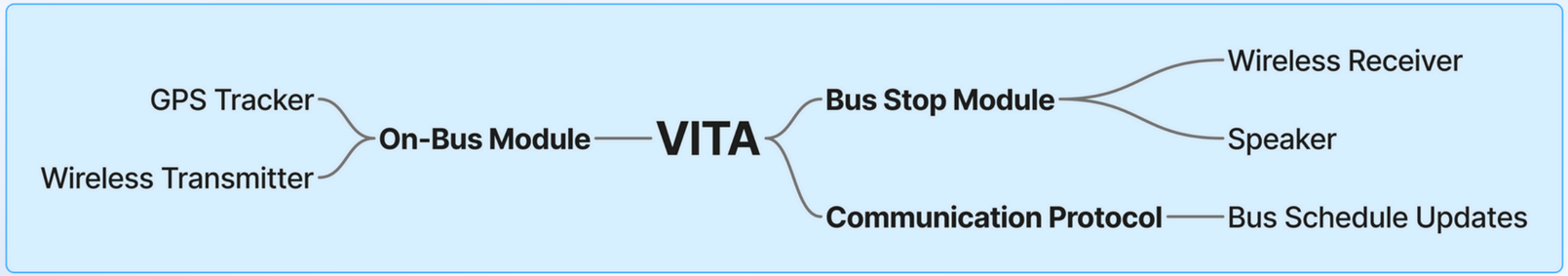
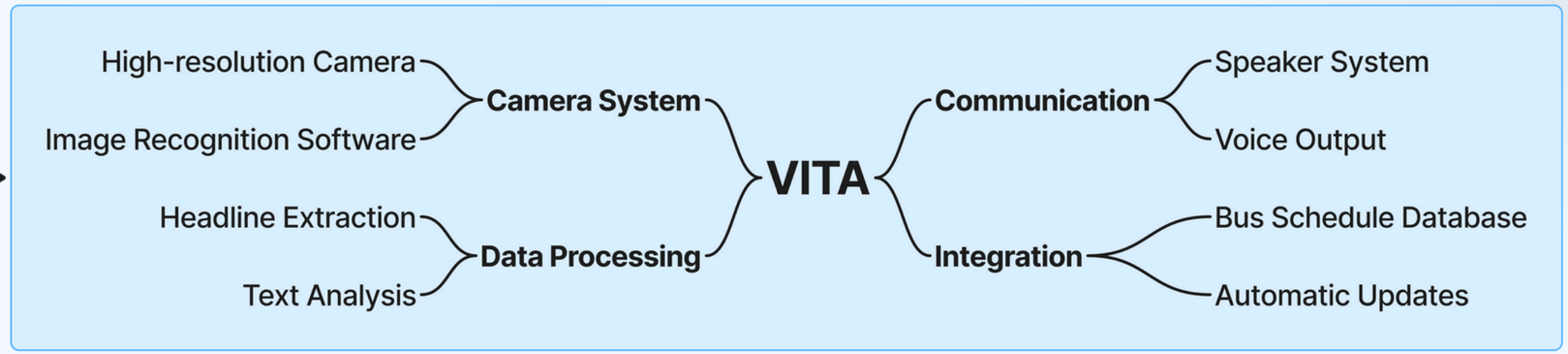
Achieved results (change of idea)

Old Idea



New Idea



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Challenges

Deciding a new idea

	Original Idea	New Idea
Advantages	Cheaper Independent from weather conditions	Simpler Installation Independent Less hardware
Disadvantages	Complex communications Needs acess to bus companies databases	More expensive Weather conditions may cause difficulties

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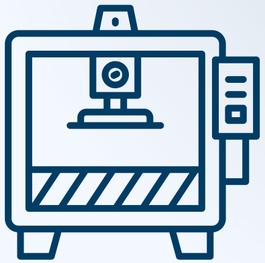
Challenges

OCR Development	Prototype assembling and materials	3D Modeling and Design
		

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Contributions

TASKS	Alexandre E.	Gonçalo A.	Miguel S.	Diogo M.	Ricardo G.	Rodrigo B.
Pitch Deck	✅	✅	✅	✅	✅	✅
Website development				✅		
Blog development and posts	✅	✅	✅	✅	✅	✅
Communication with partners			✅	✅	✅	
3D Design			✅			
Prototype bill of materials			✅		✅	
OCR Development	✅	✅				
Marketing Materials				✅		✅
Prototype assembling			✅		✅	
Text-to-speech					✅	

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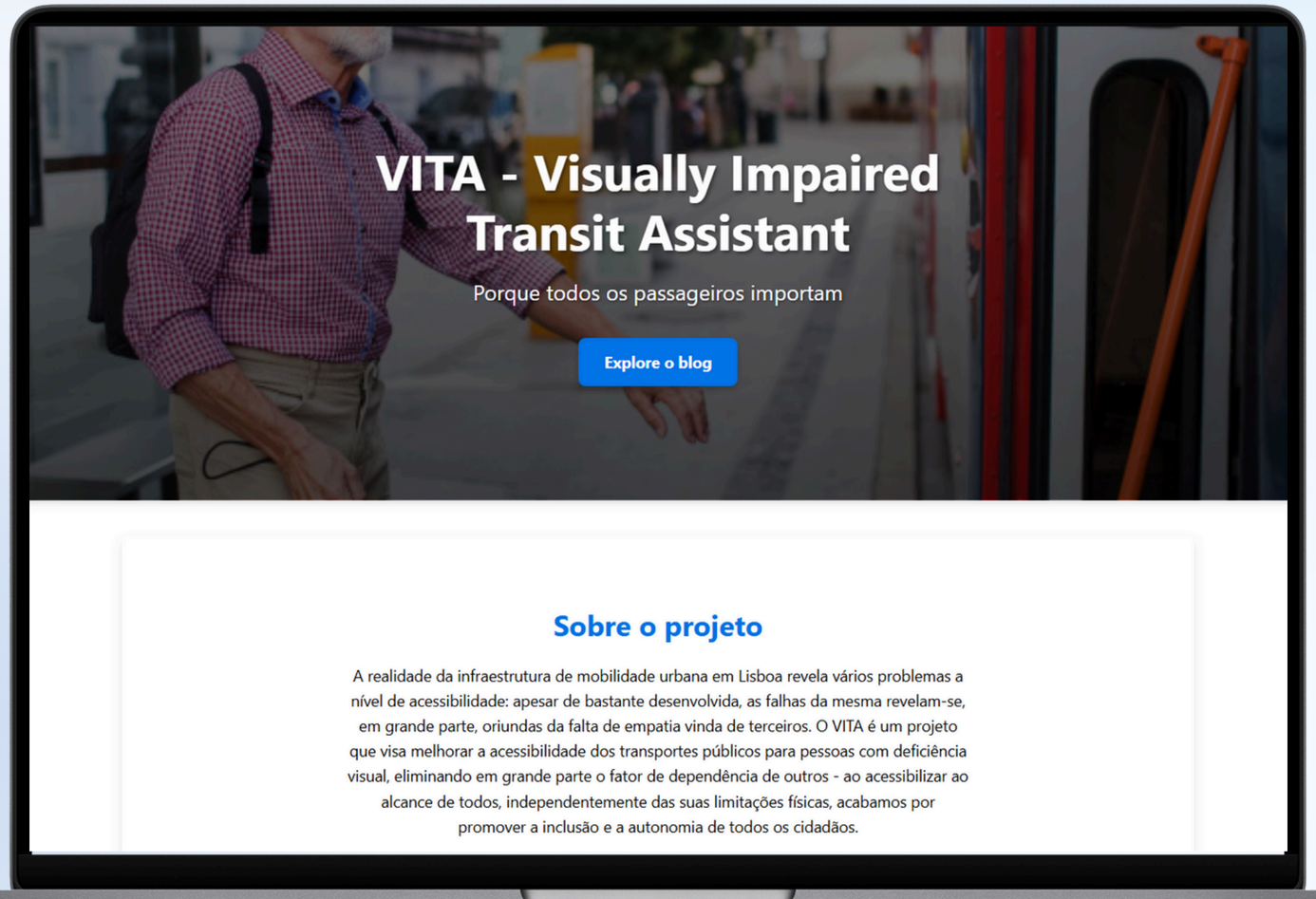
Website and Demo Video



Website

SCAN ME

Demo Video

SCAN ME