



Pill Watcher





Sumário



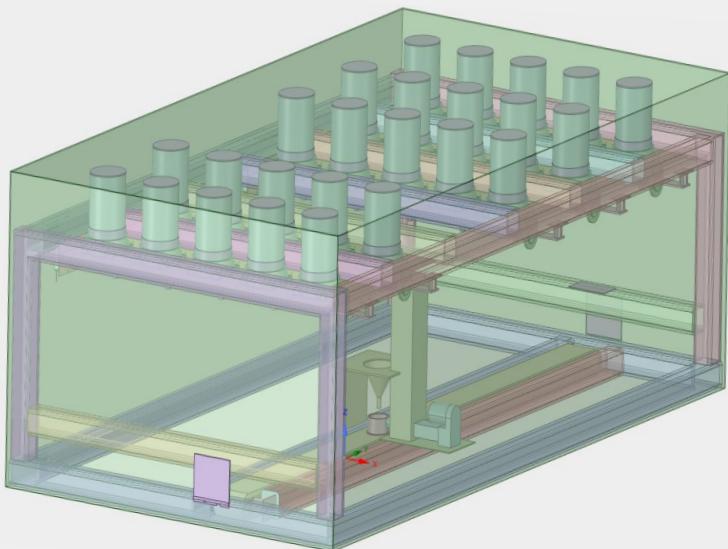


Soluções de Estrutura

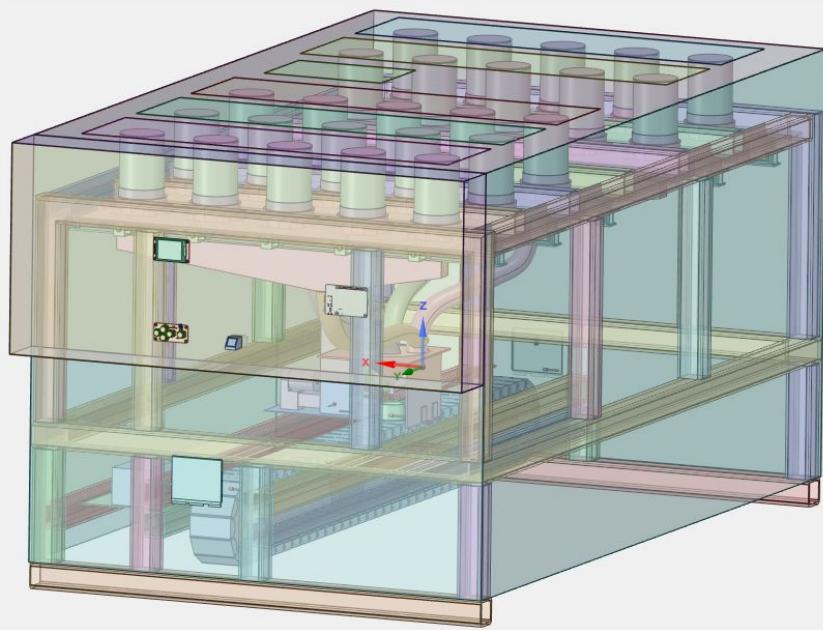


Evolução do Cad

PC1

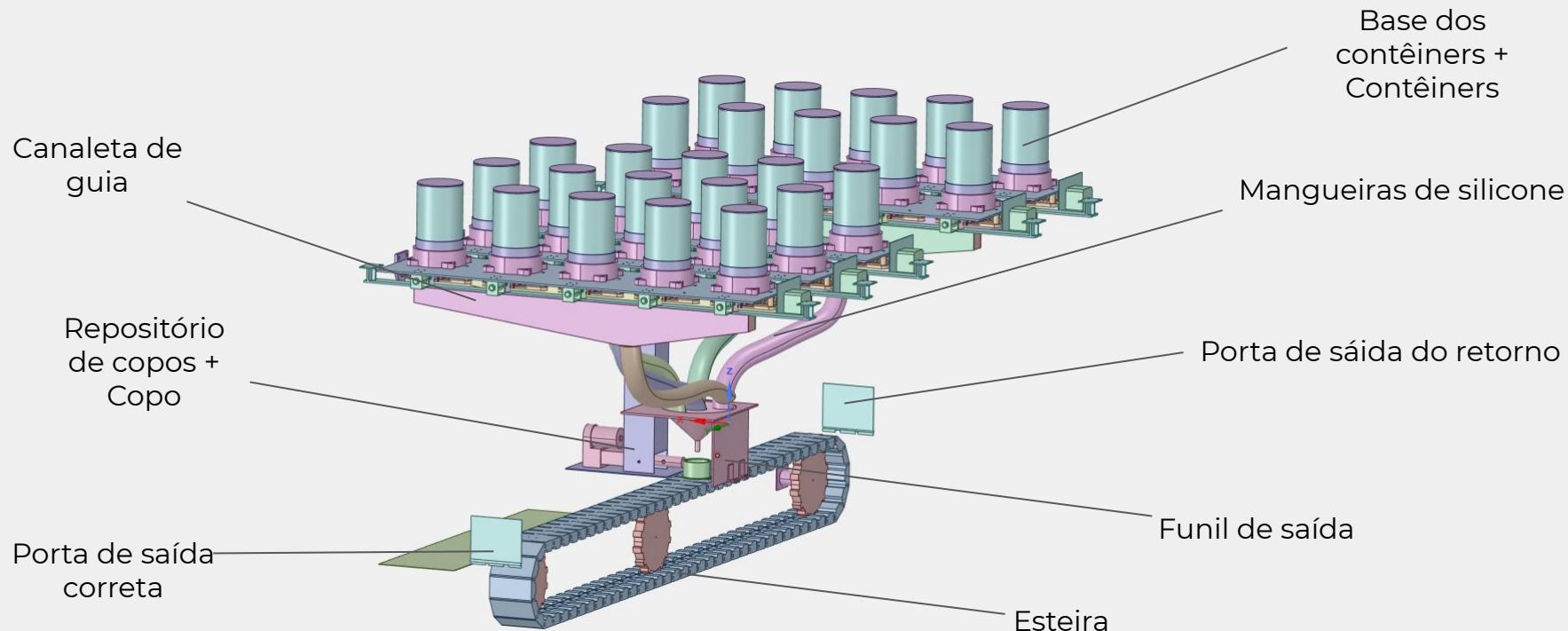


PC2



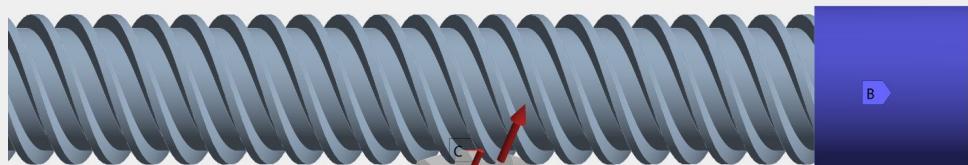


Evolução do Cad





Dimensionamento Fuso-Engrenagem



D: Static Structural

Static Structural

Time: 0,98152 s

14/10/2020 23:10

A Cylindrical Support: 0, mm

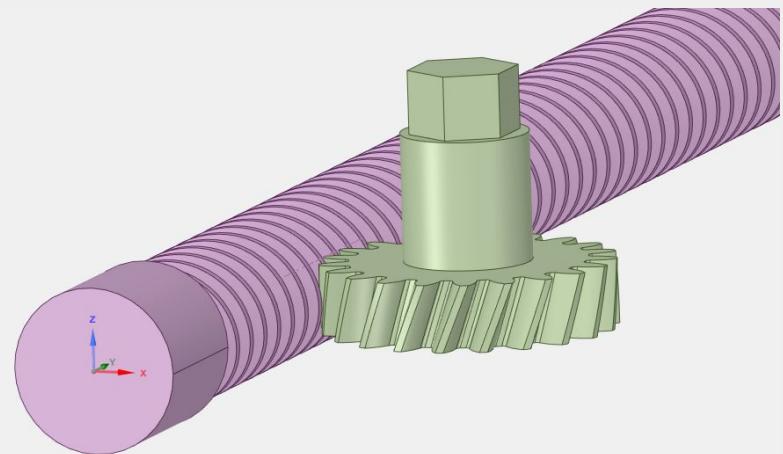
B Cylindrical Support 2: 0, mm

C Força engrenagem: 66,917 N

D Força Fuso: 66,917 N

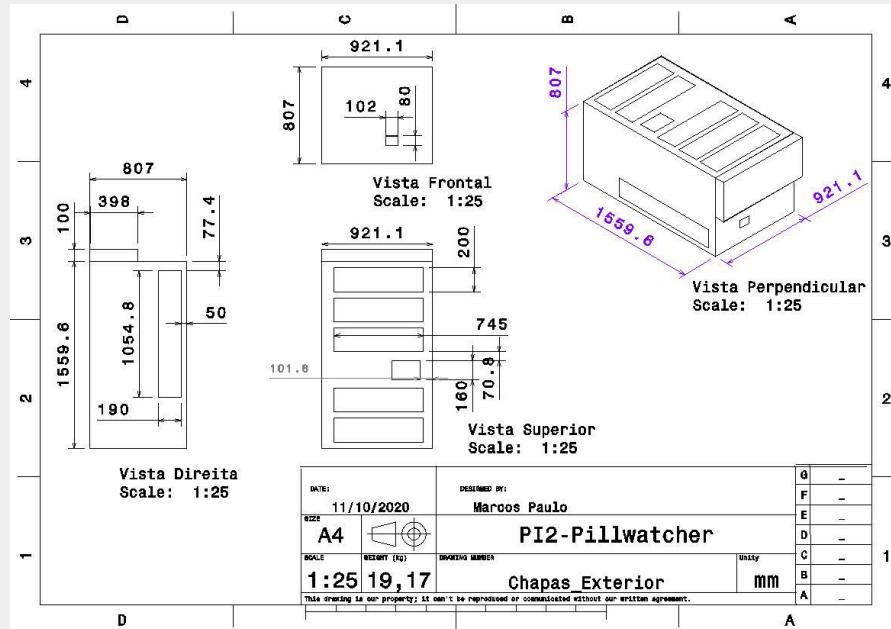
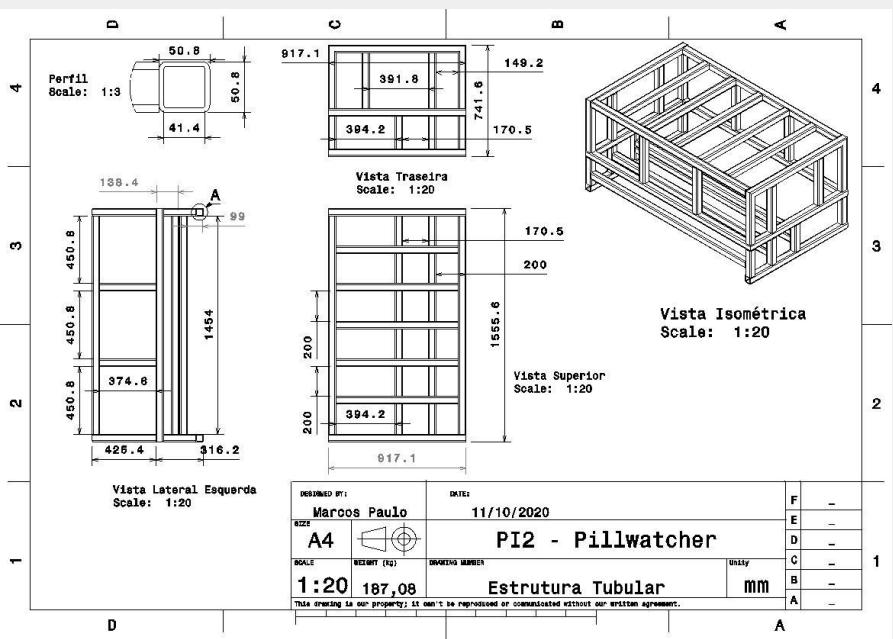
E Standard Earth Gravity: 9806,6 mm/s²

F Suporte Engrenagem



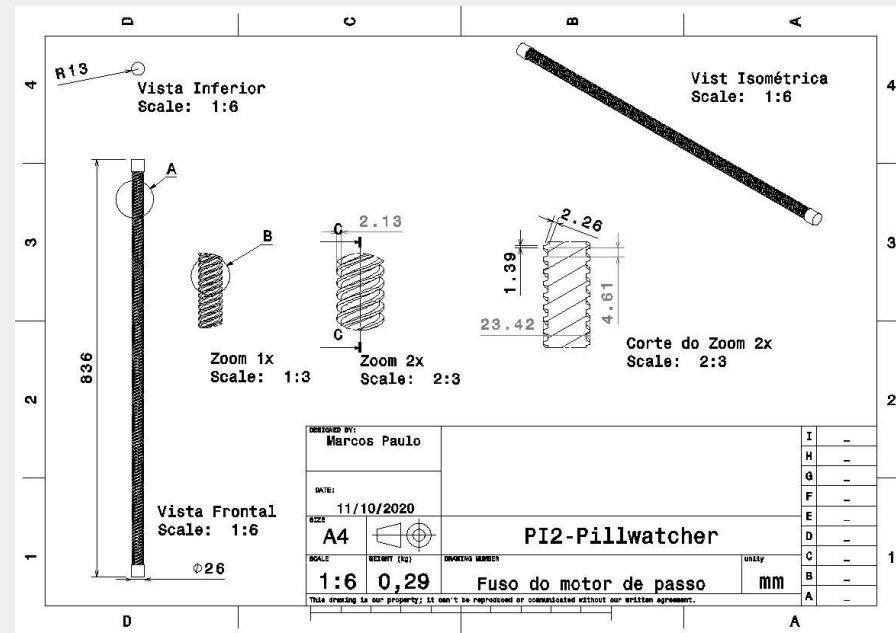
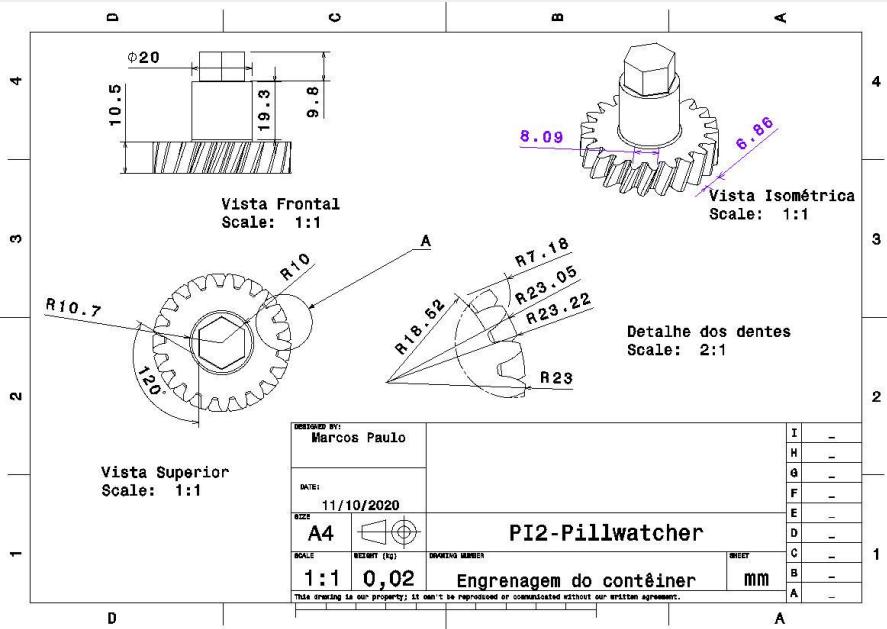


Desenhos Técnicos



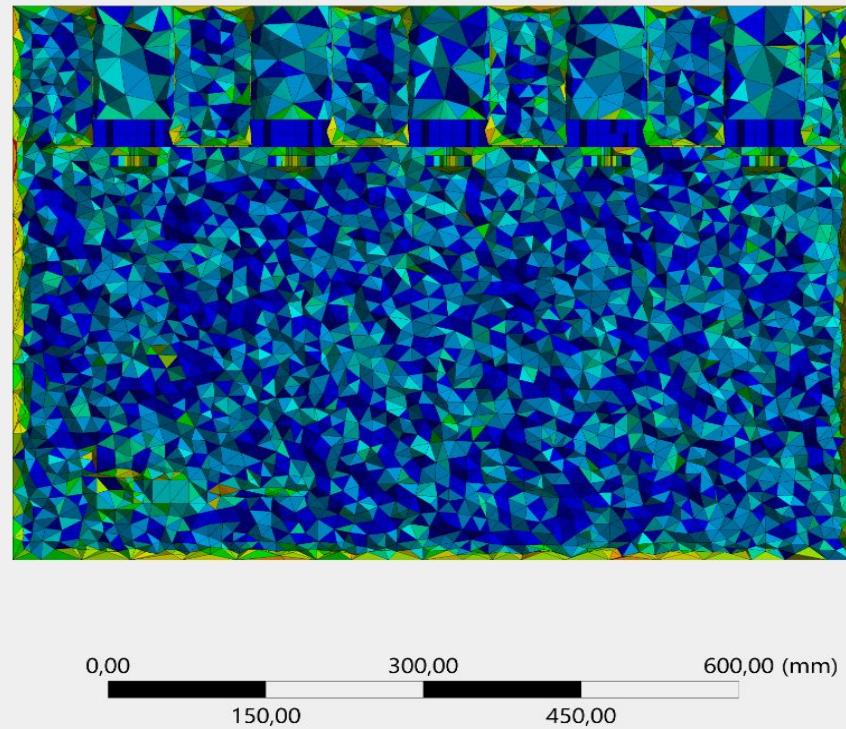
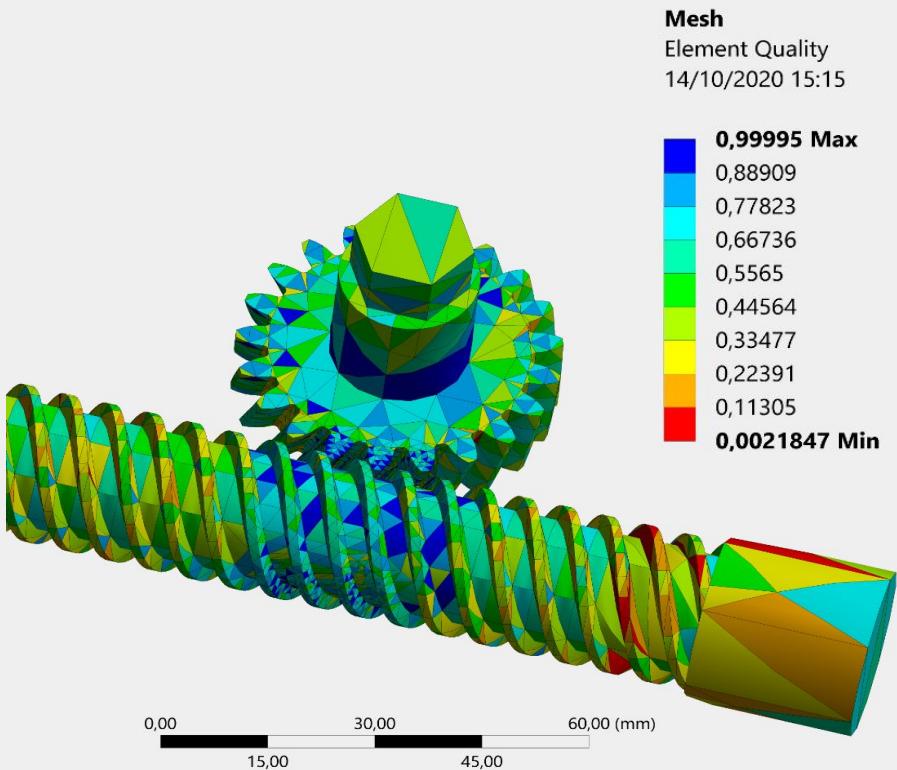


Desenhos Técnicos





Convergência das malhas



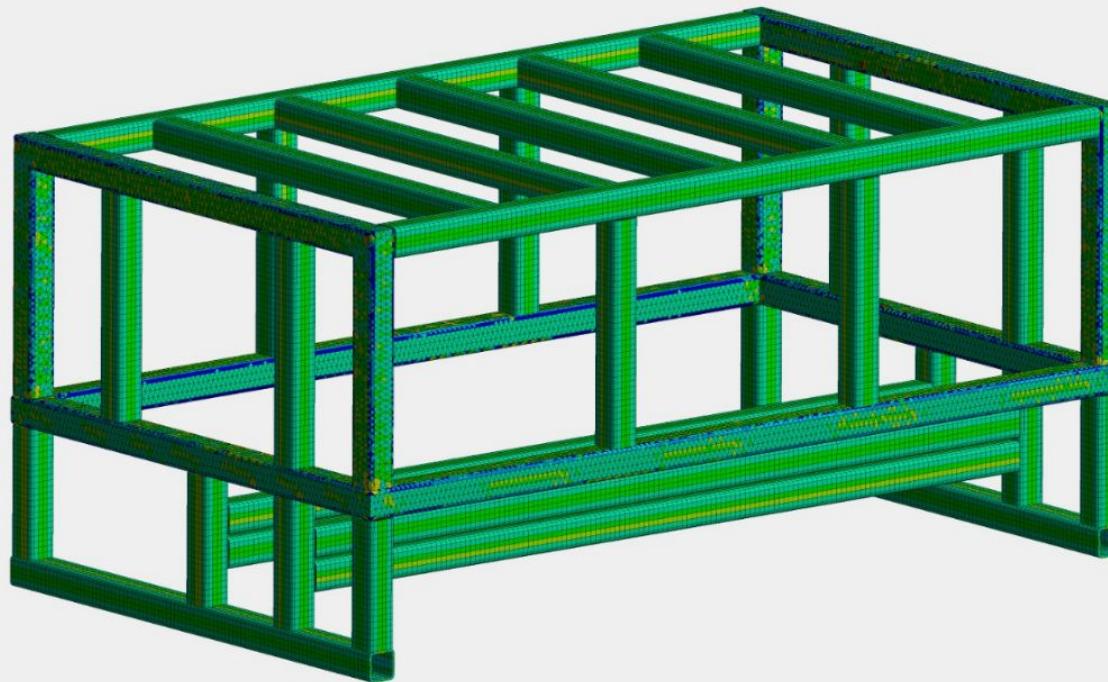
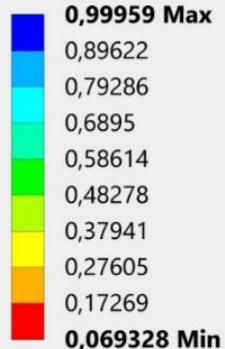


Convergência das malhas

Mesh

Element Quality

14/10/2020 18:19



0,00 500,00 1000,00 (mm)
250,00 750,00



Análise Estrutural

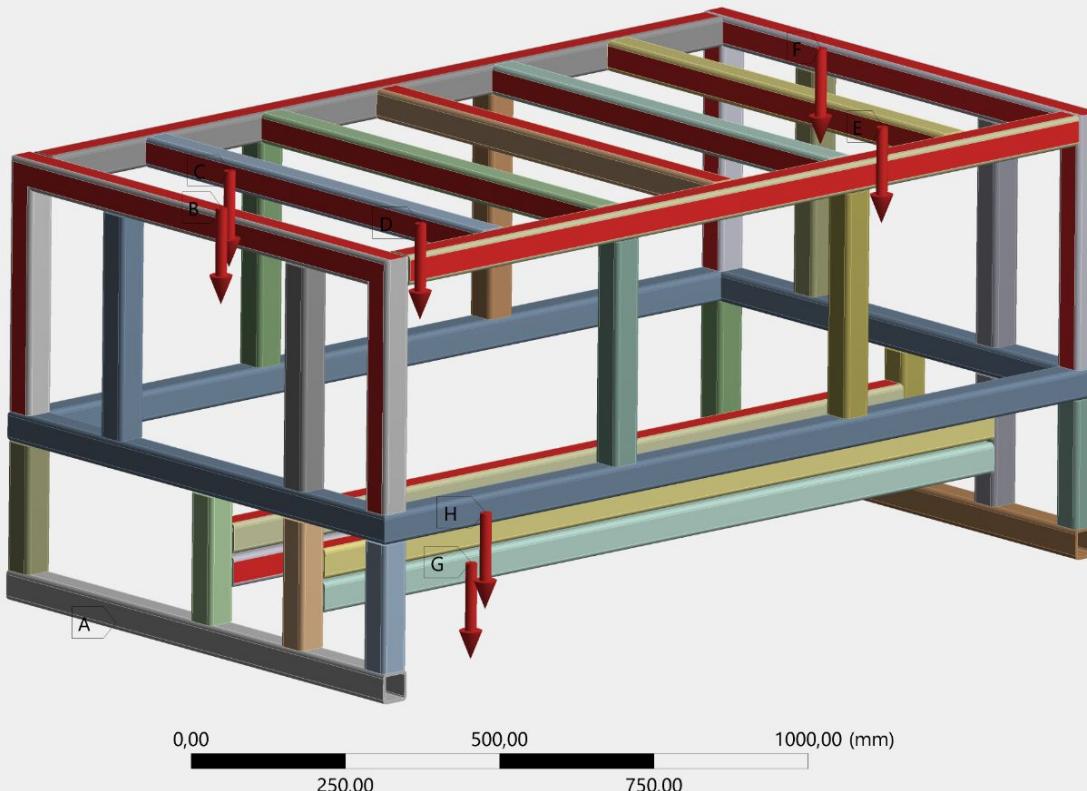
A: Static Structural

Static Structural

Time: 1, s

14/10/2020 18:35

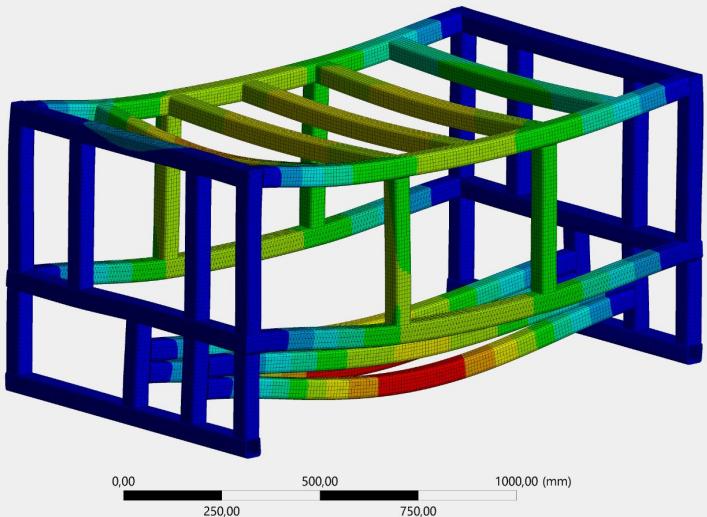
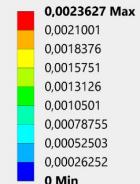
- A** Fixed Support
- B** Force: 10,091 N
- C** Force 2: 10,091 N
- D** Force 3: 9,78 N
- E** Force 4: 10,13 N
- F** Force 5: 19,684 N
- G** Force 6: 20,685 N
- H** Force 7: 13,915 N



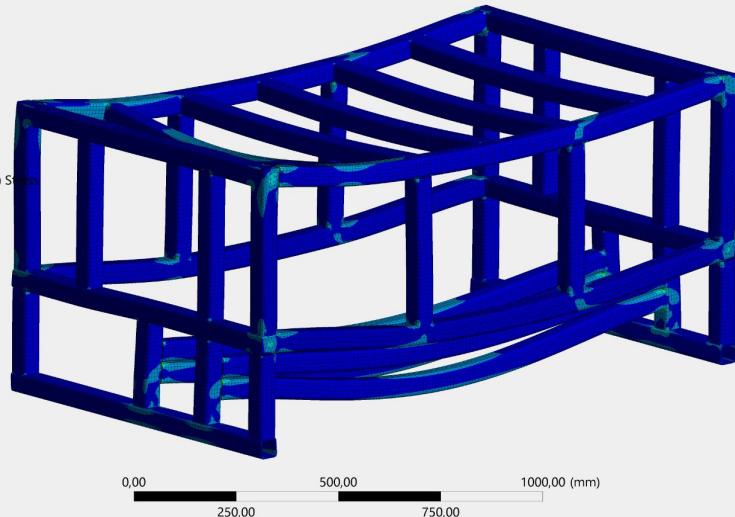
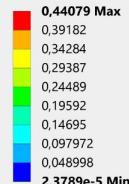


Resultado da Análise Estrutural

A: Static Structural
Total Deformation
Type: Total Deformation
Unit: mm
Time: 1
14/10/2020 18:39



A: Static Structural
Equivalent Stress
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1
14/10/2020 18:44

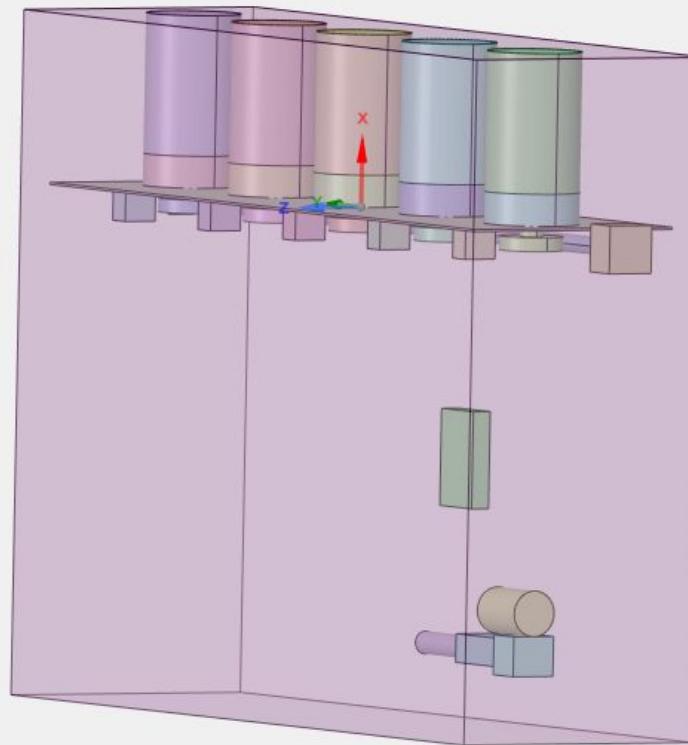




Análise Térmica

Geometria simplificada:

- Cilindros
- Caixas





Condições de contorno

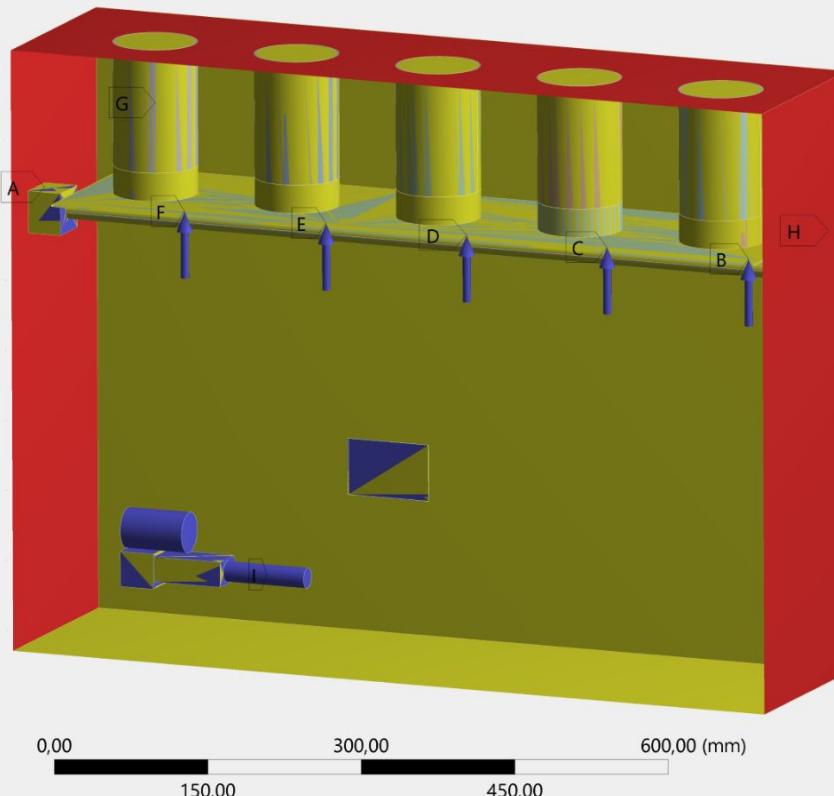
C: Transient Thermal

Transient Thermal

Time: 5, s

14/10/2020 15:03

- A** MOTOR PASSO: $8,0032e-005 \text{ W/mm}^3$
- B** Sensor F 1: 1,65 W
- C** Sensor F 2: 1,65 W
- D** Sensor F 3: 1,65 W
- E** Sensor F 4: 1,65 W
- F** Sensor F 5: 1,65 W
- G** Convection: $22, ^\circ\text{C}$, $5,e-006 \text{ W/mm}^2 \cdot ^\circ\text{C}$
- H** Temperature: $22, ^\circ\text{C}$
- I** ATUADOR: $1,1228e-004 \text{ W/mm}^3$
- J** RASPBERRY: $5,6722e-004 \text{ W/mm}^3$





Resultados da análise térmica

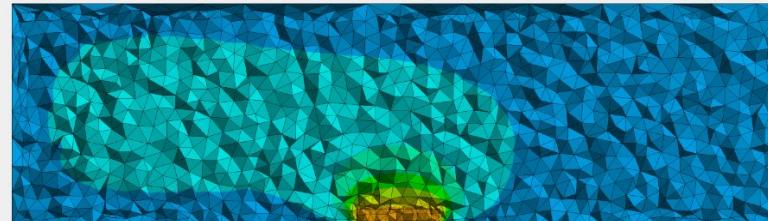
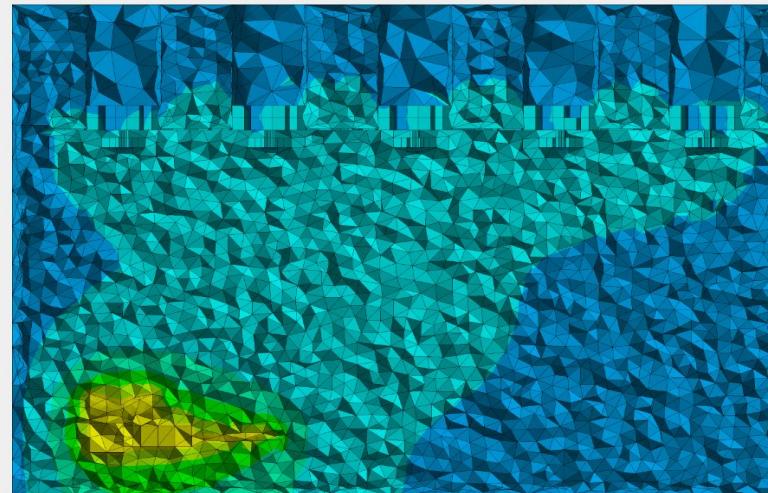
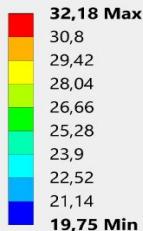
C: Transient Thermal

Temperature 14

Type: Temperature

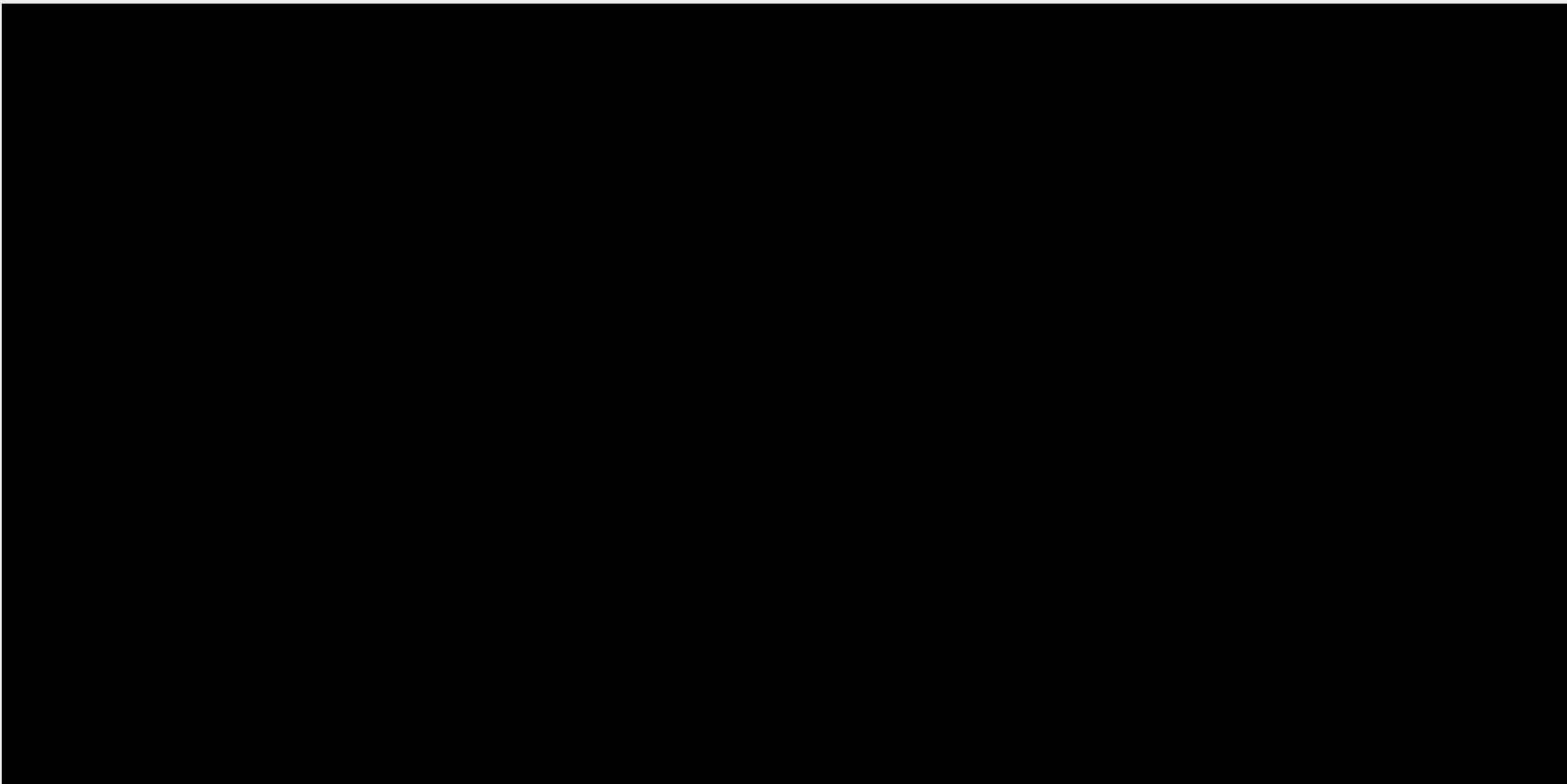
Unit: °C

Time: 7200





Animação do Funcionamento da Estrutura



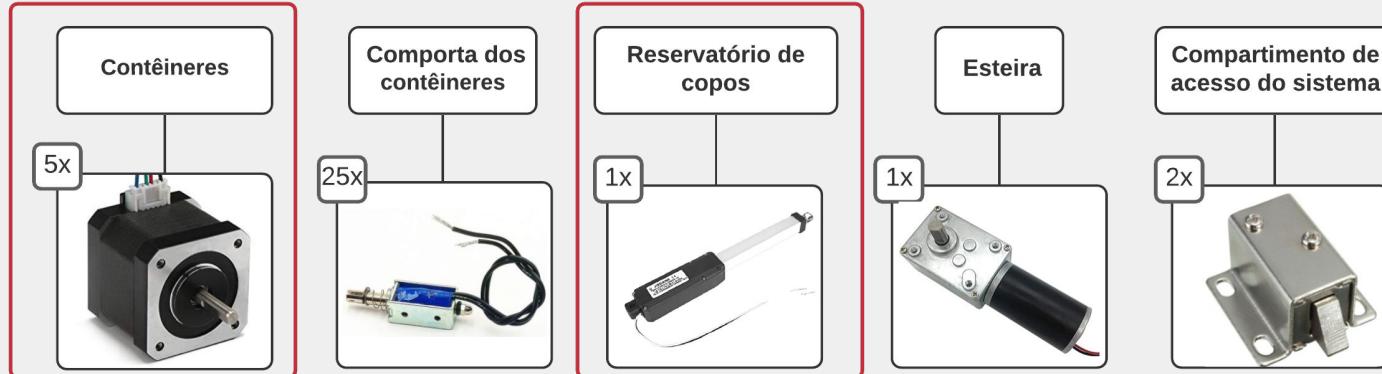


Próximo Palestrante Rebeka

Soluções de Energia



Soluções - Energia



Cenário Selecionado

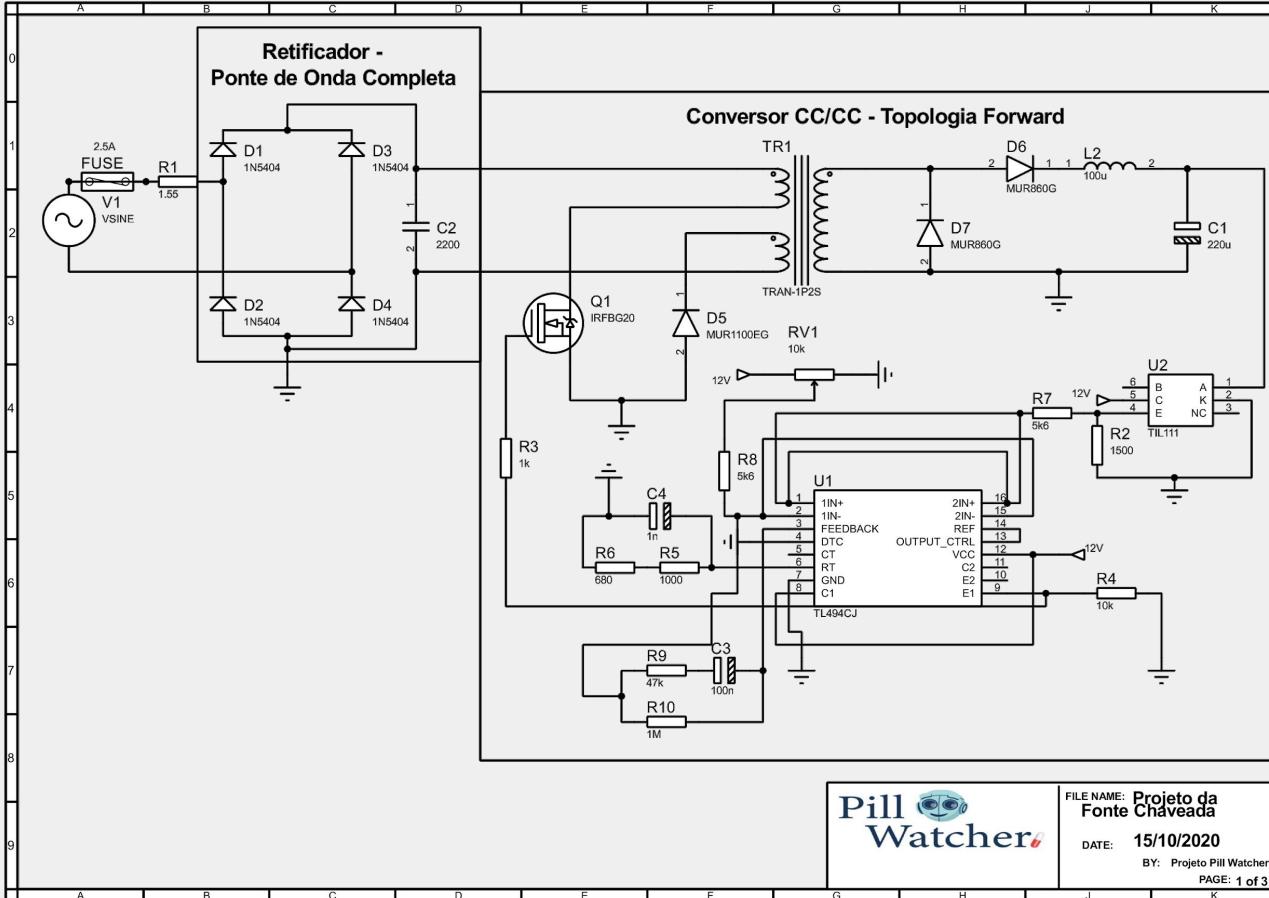
Componentes eletrônicos	4,22 A
Motores e Drivers	4,9 A
Total	9,12 A

- Fator de engenharia/segurança ≈ 1.7

- Corrente de Projeto = **15 A**
- Tensão de Projeto = **12 V**
- Potência = **180 W**



Soluções - Energia



Retificador CA/CC

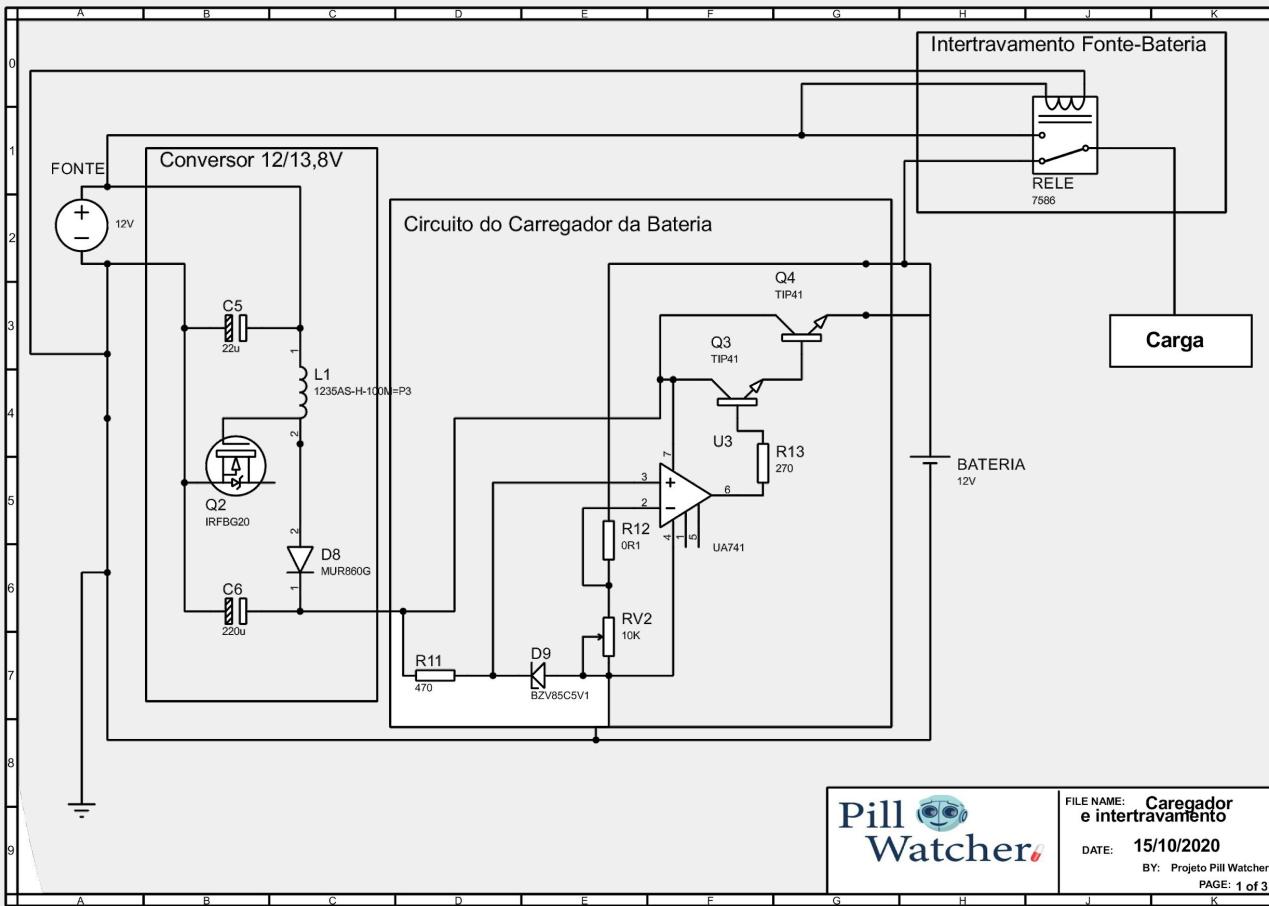
- Ponte de onda completa (full bridge)

Conversor CC/CC

- Conversor isolado
- Tipologia Forward

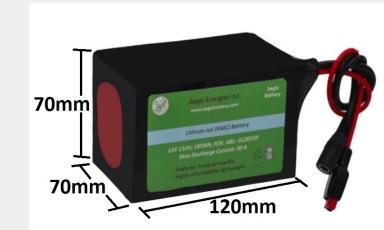


Soluções - Energia



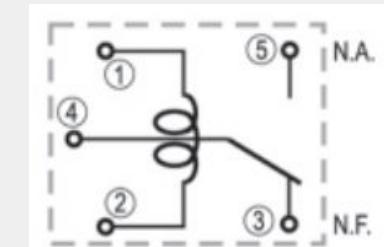
BATERIA

- Íon-Lítio
- 12V 15Ah
- Modelo CRG-01203M



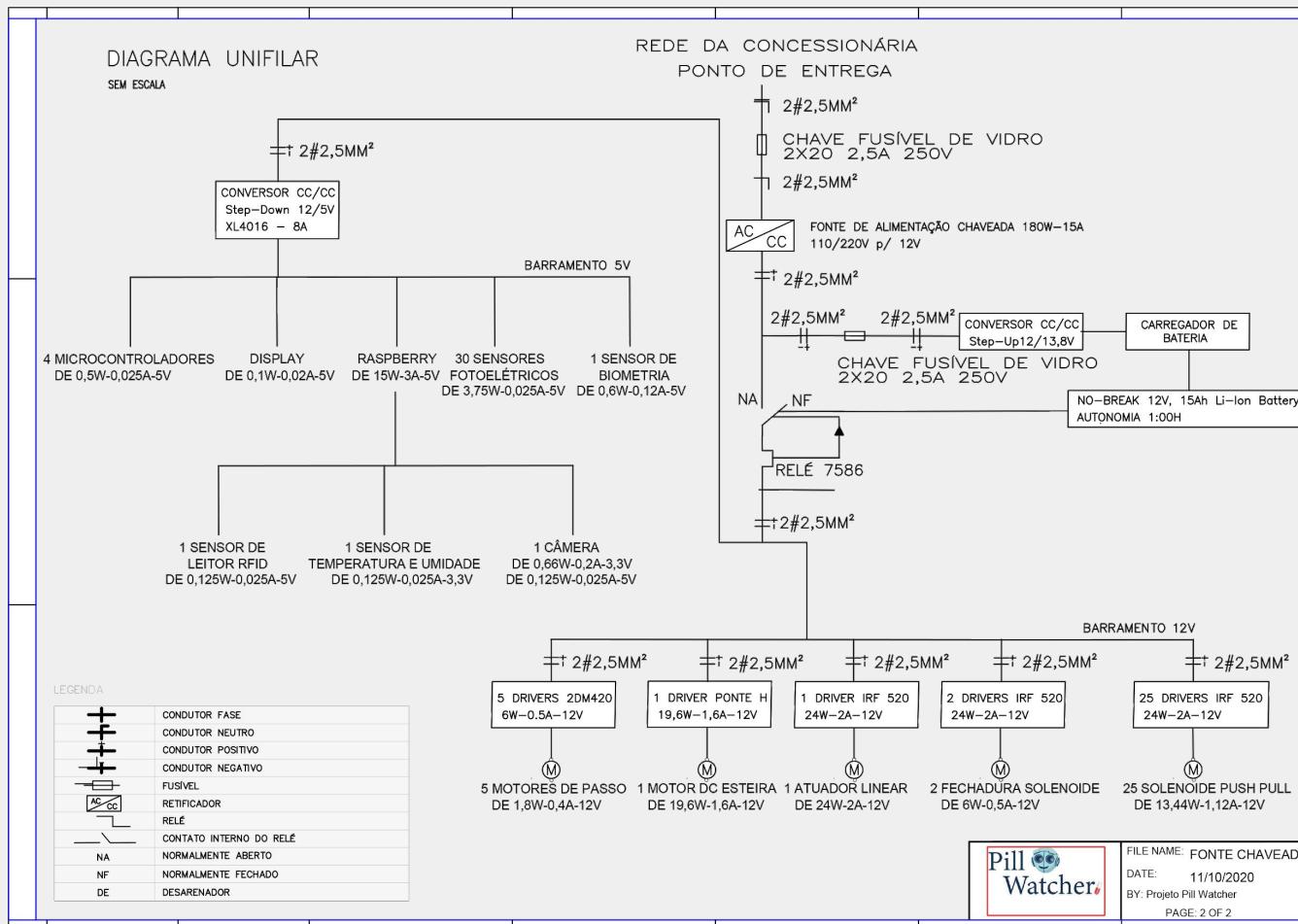
RELÉ 7586

- Relé reversor selado N.A/N.F
- 12V/15A





Soluções - Energia





Próximo Palestrante Sofia

Soluções de Eletrônica



Soluções - Eletrônica

A solução de eletrônica pode ser dividida em:

- Módulo de Medição;
- Central de Controle;
- Sistema de Açãoamento dos Atuadores.





Módulo de Medição

- Sensor de temperatura e umidade:
HTU21D (1 un.)



- Sensor de Biometria: **DY50** (1 un.)



- Interruptor: **KW10-B** (30 un.)



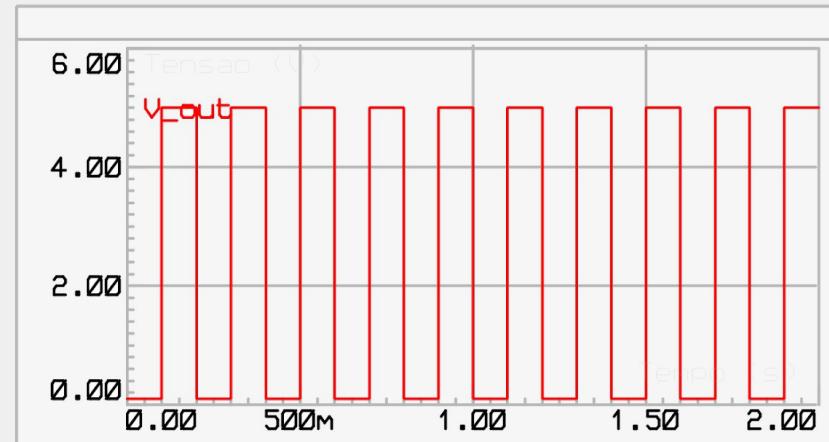
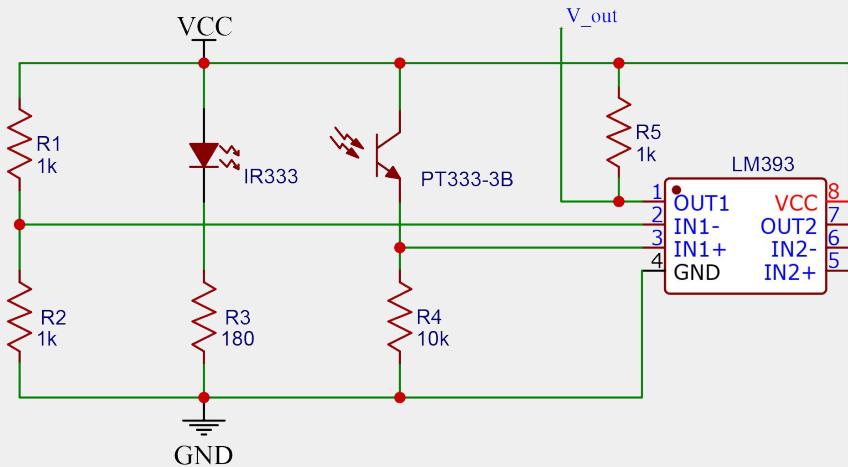
- Sensor de leitura de RFID: **PN532** (1 un.)





Módulo de Medição

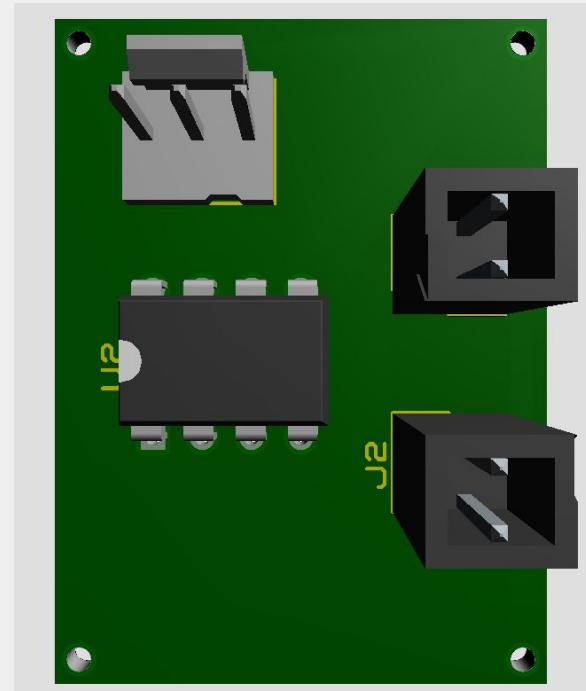
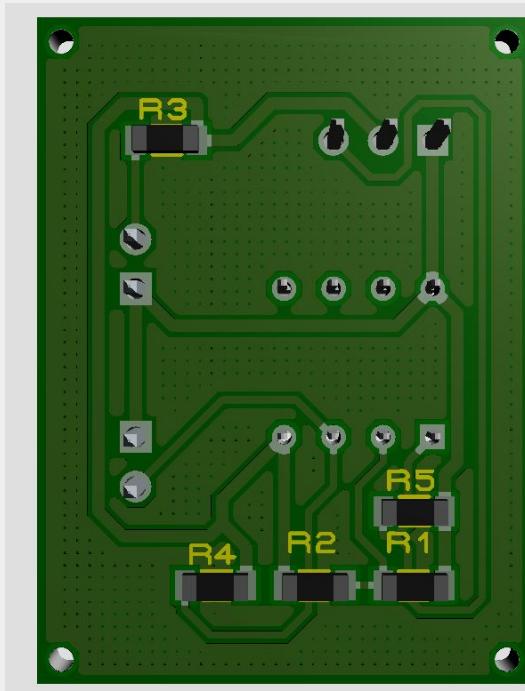
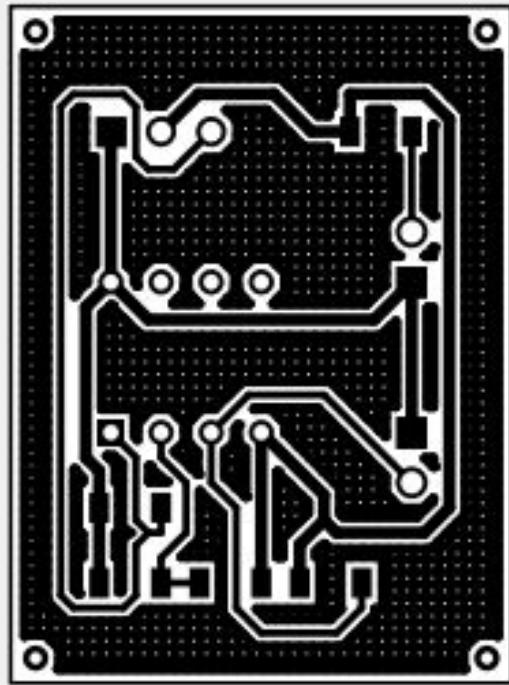
- Círcuito e Simulação do sensor fotoelétrico de barreira





Módulo de Medição

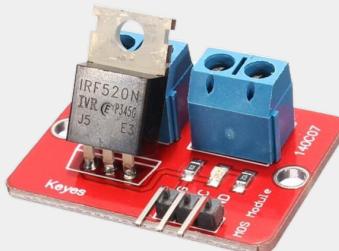
- PCI sensor fotoelétrico de barreira



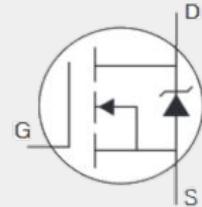


Sistema de Acionamento de Atuadores

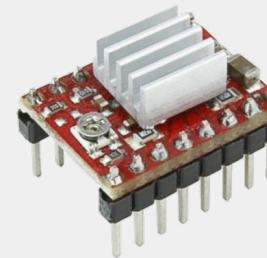
- **Driver IRF520N** (28 un.)
 - **Solenoides** (27 un.)
 - **Atuador Linear** (1 un.)
- **Corrente máx. de carga:** 5A
- **Driver A4988** - Motores de Passo (5 un.)
- **Driver L298N** - Motor DC (1 un.)



Módulo IRF520N



Mosfet IRF520N





Central de Controle - Módulo de Visualização



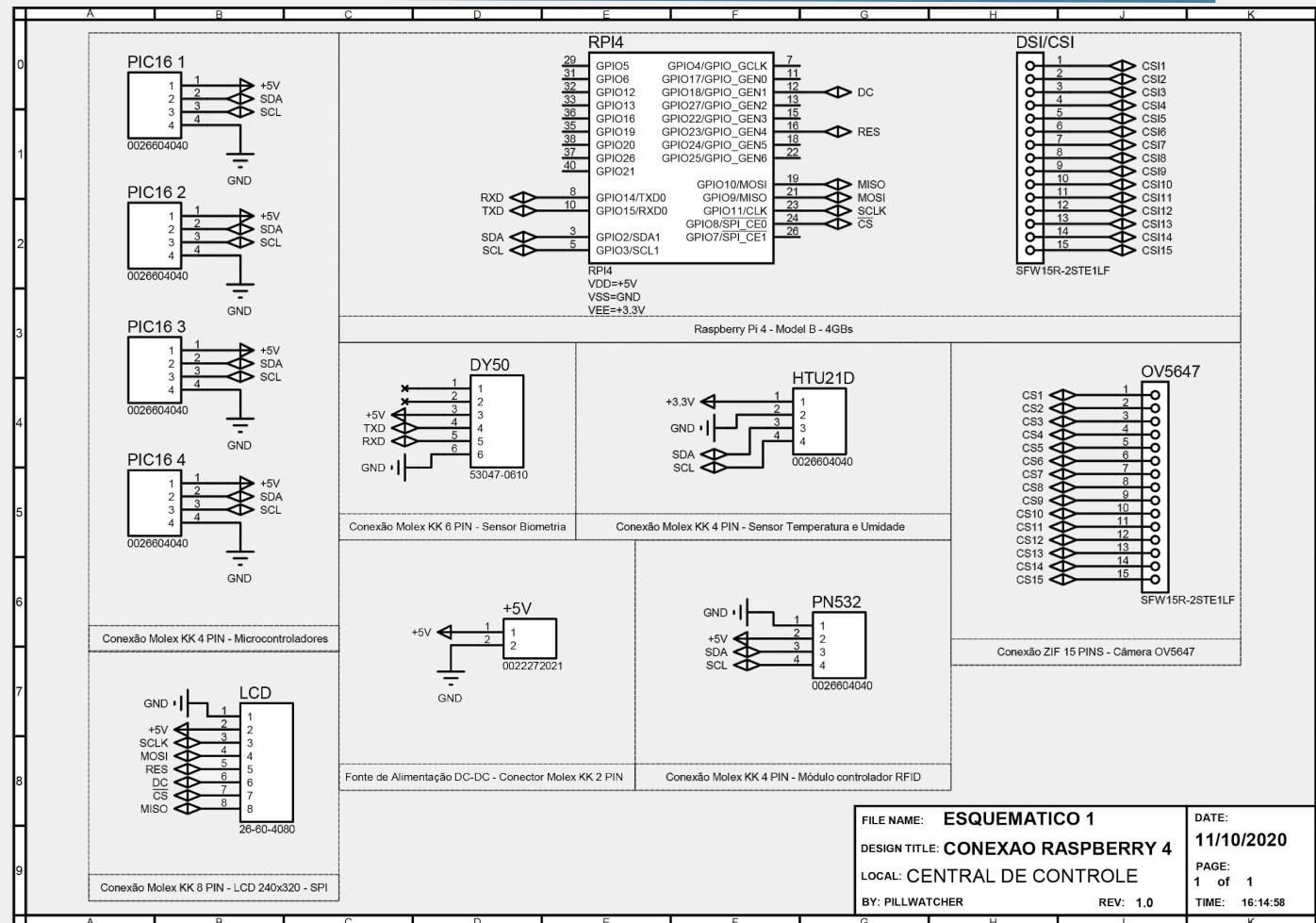
- **Tela** LCD TFT 280x320
- **Teclado** de 5 teclas



Mock-up das telas do display

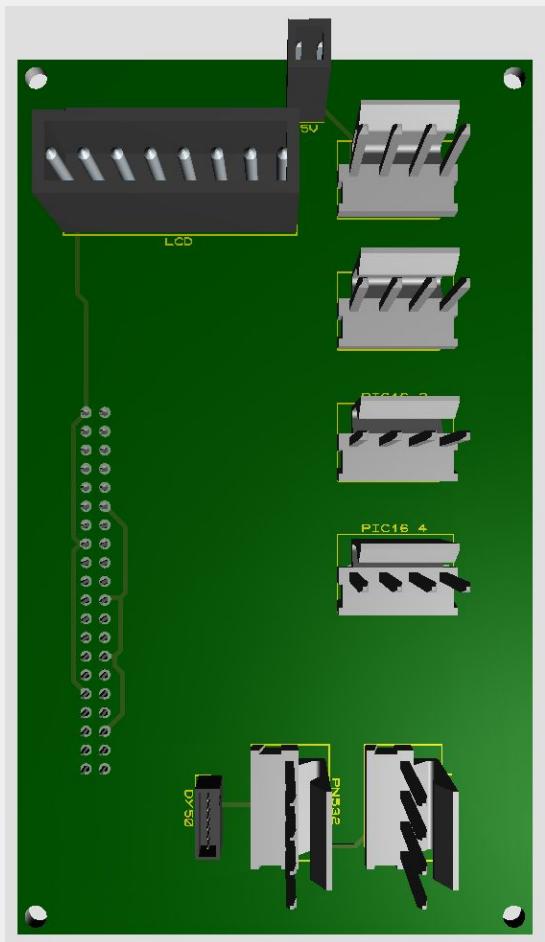
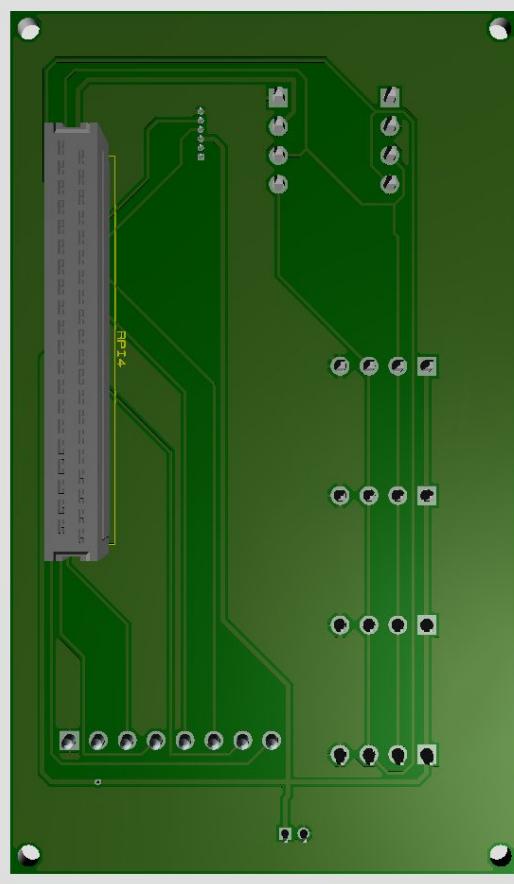
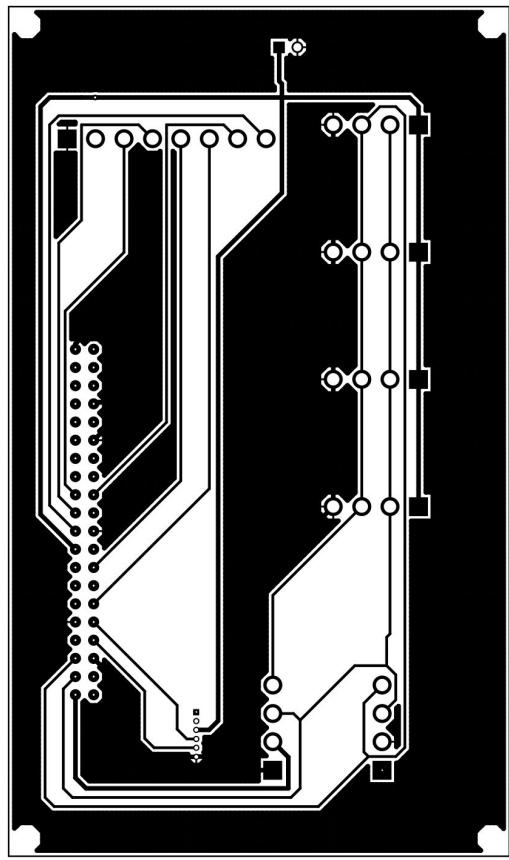


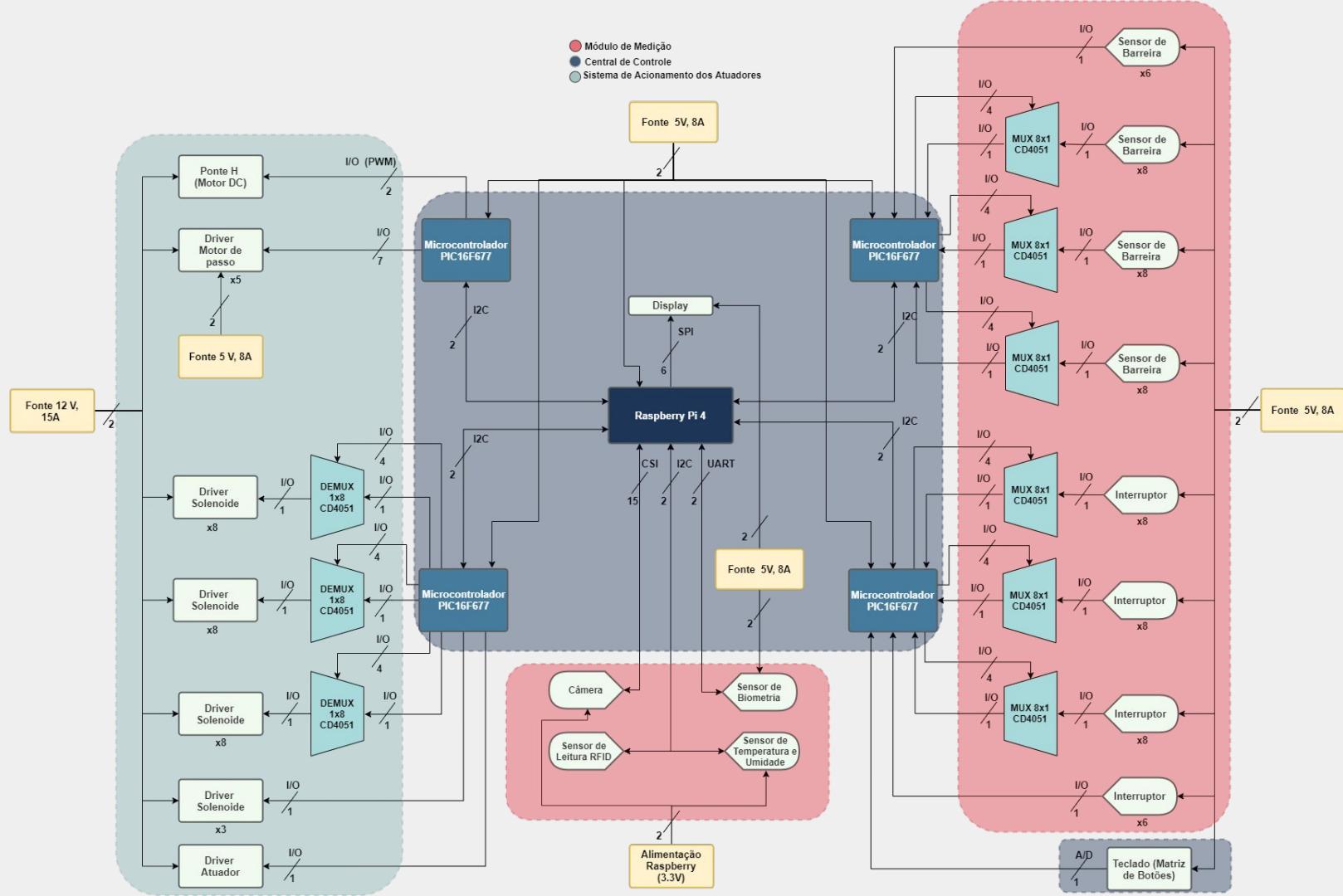
Central de Controle - Esquemático





Central de Controle - PCI

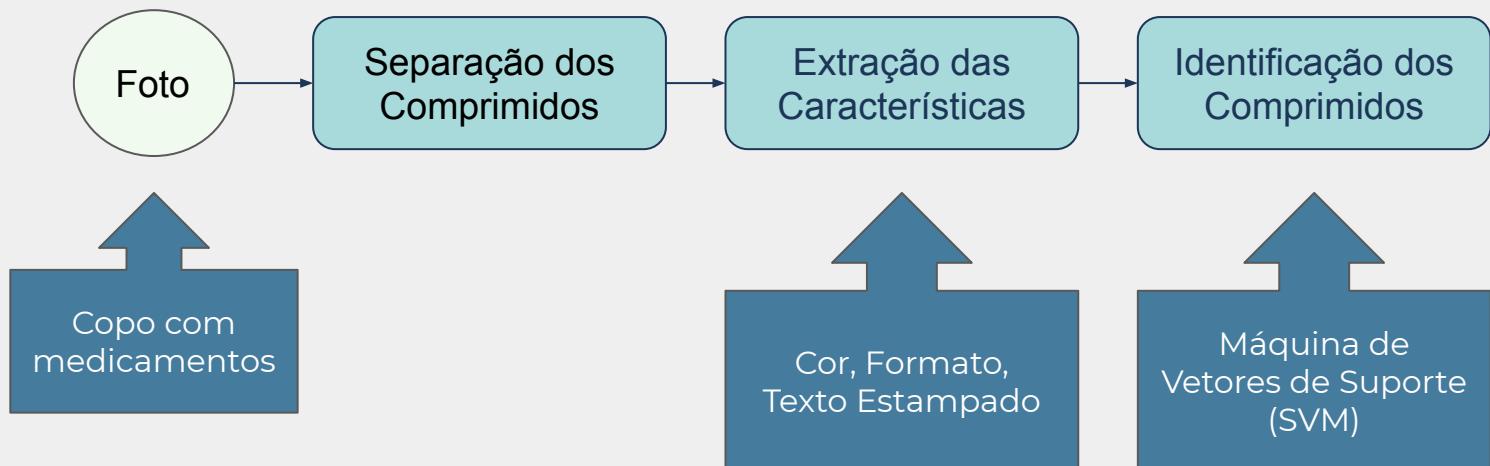






Processamento de Imagem

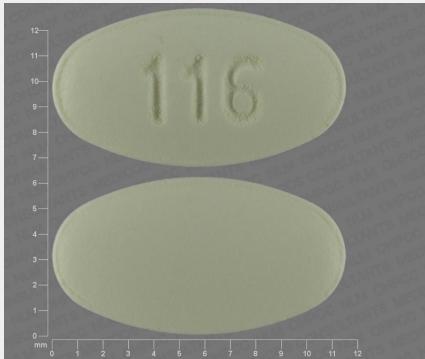
Câmera OV5647



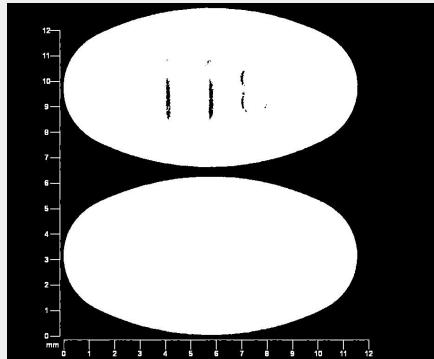


Processamento de Imagem

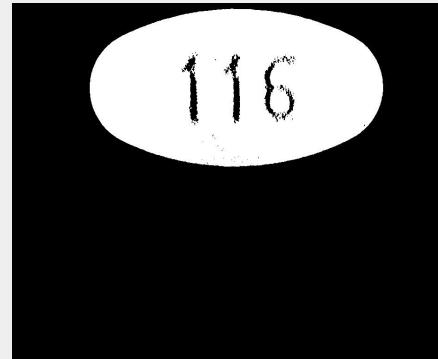
Original



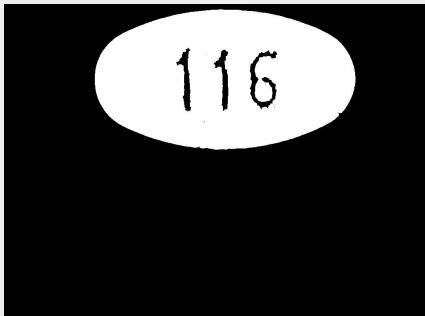
Limiar - Obj. 1 e 2



Destaque dos Contornos



Conexão das Letras



Texto Isolado

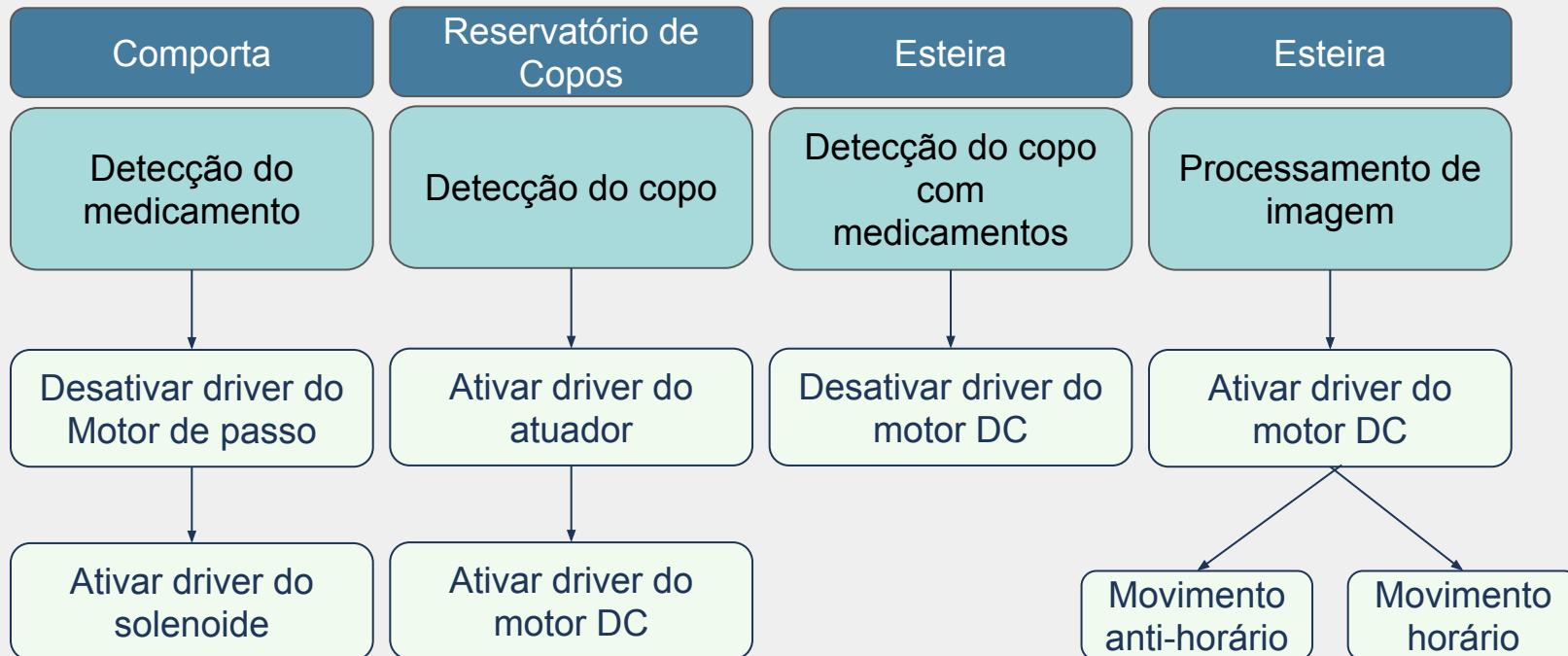


Texto Identificado





Central de Controle





Próximo Palestrante Filipe

Soluções de Software



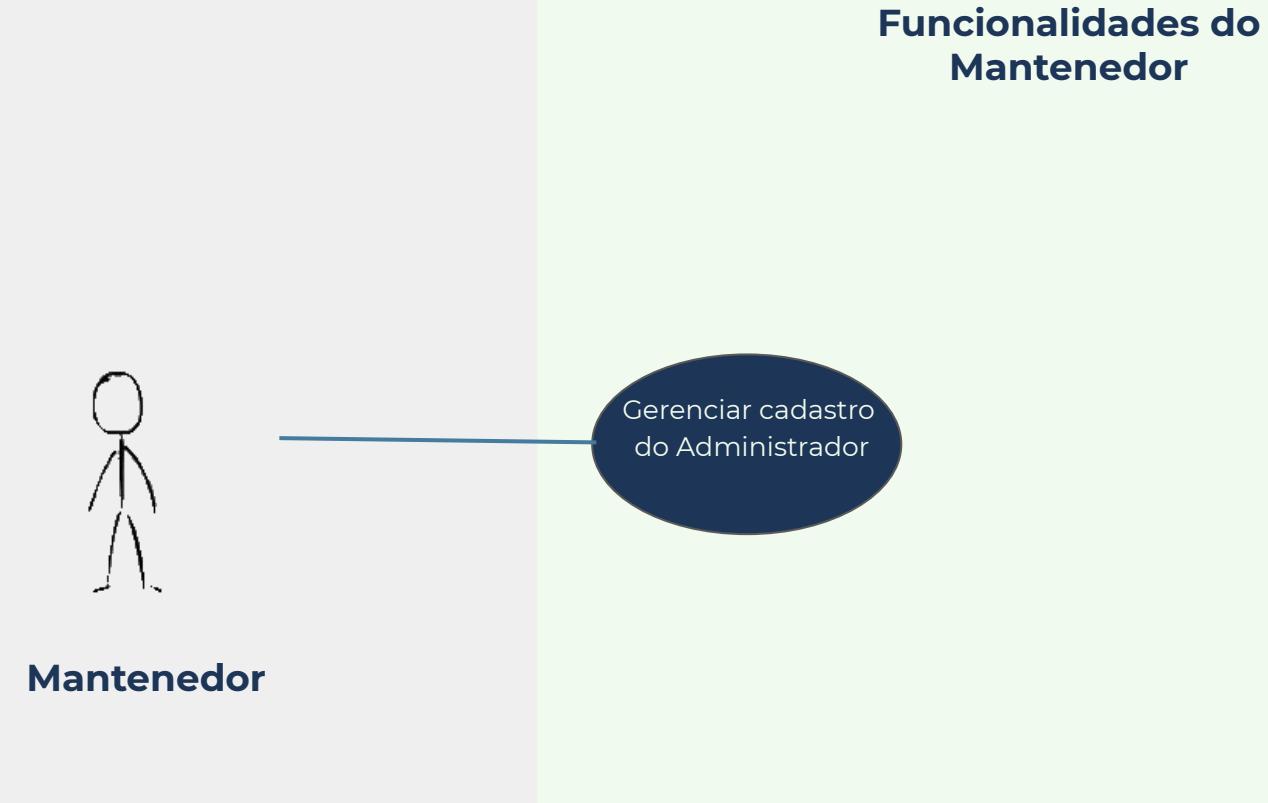
Inovações do Software

- Arquitetura de Microsserviços
- Arquitetura de Informação com Prototipagem em Figma
- Internet of Things
- *Reactive Programming*
- *Design Patterns*
- Computação em Nuvem
- Orientação à Métricas





Diagramas de Caso de Uso - Mantenedor



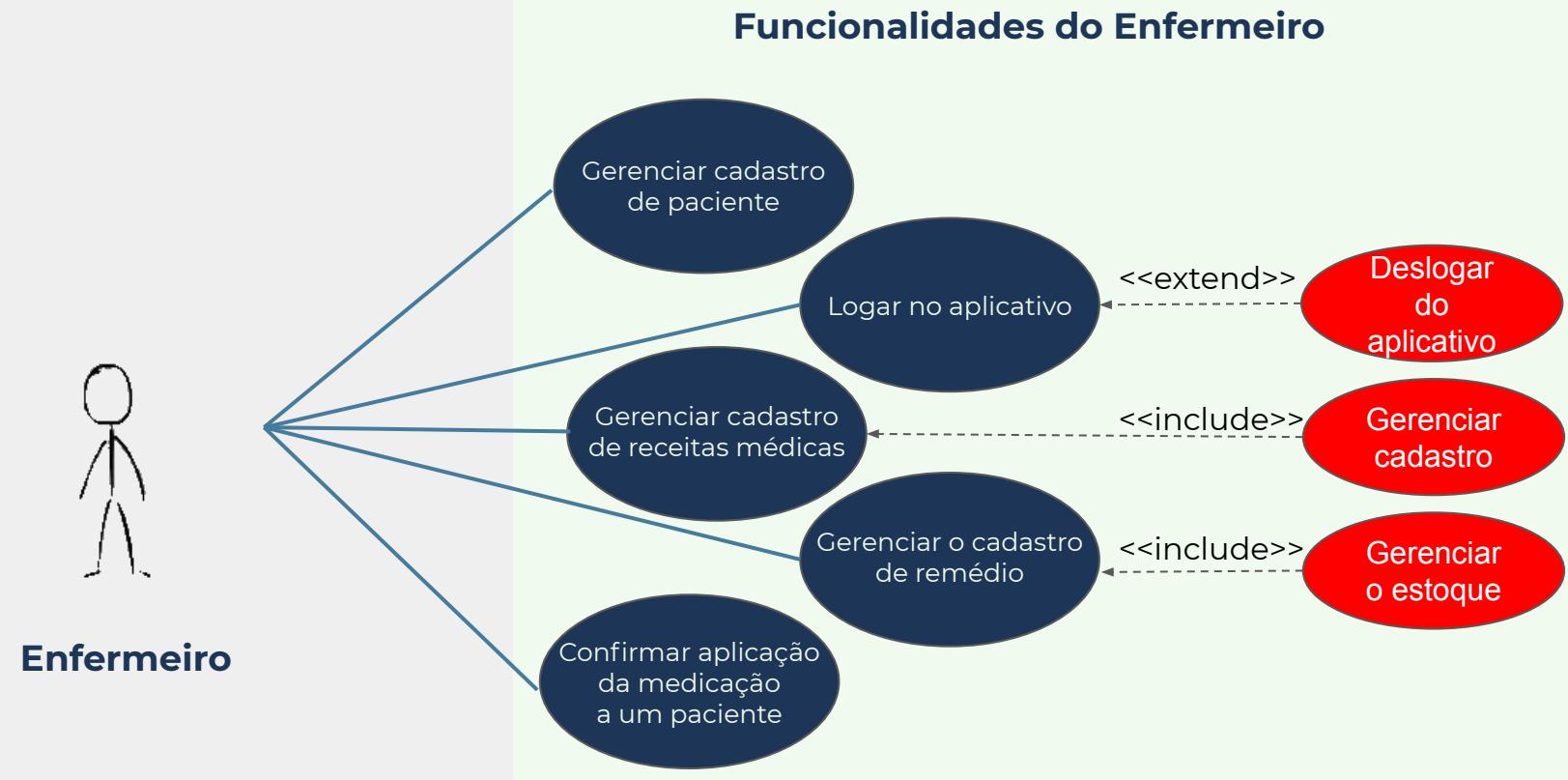


Diagramas de Caso de Uso - Enfermeiro



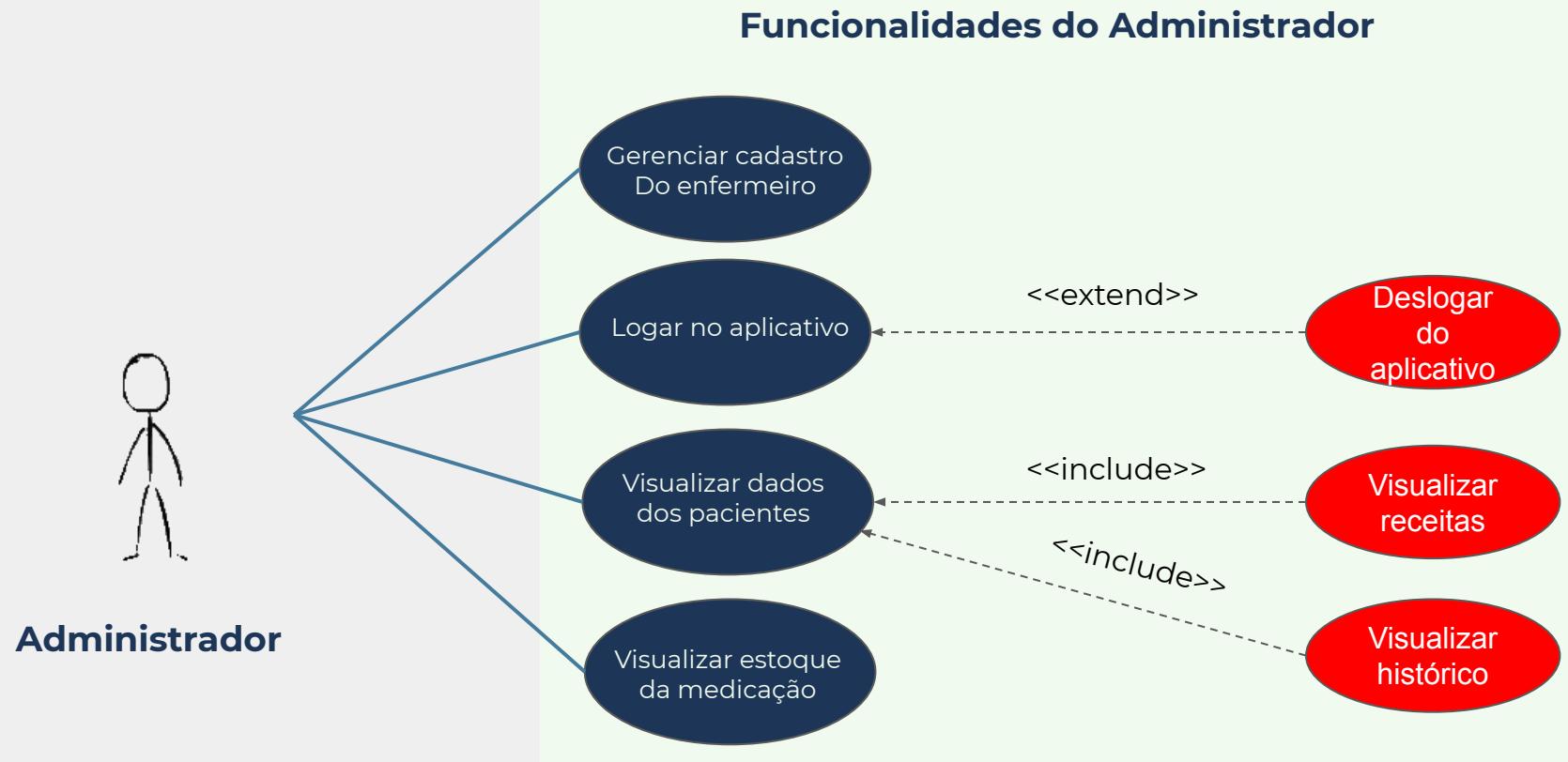


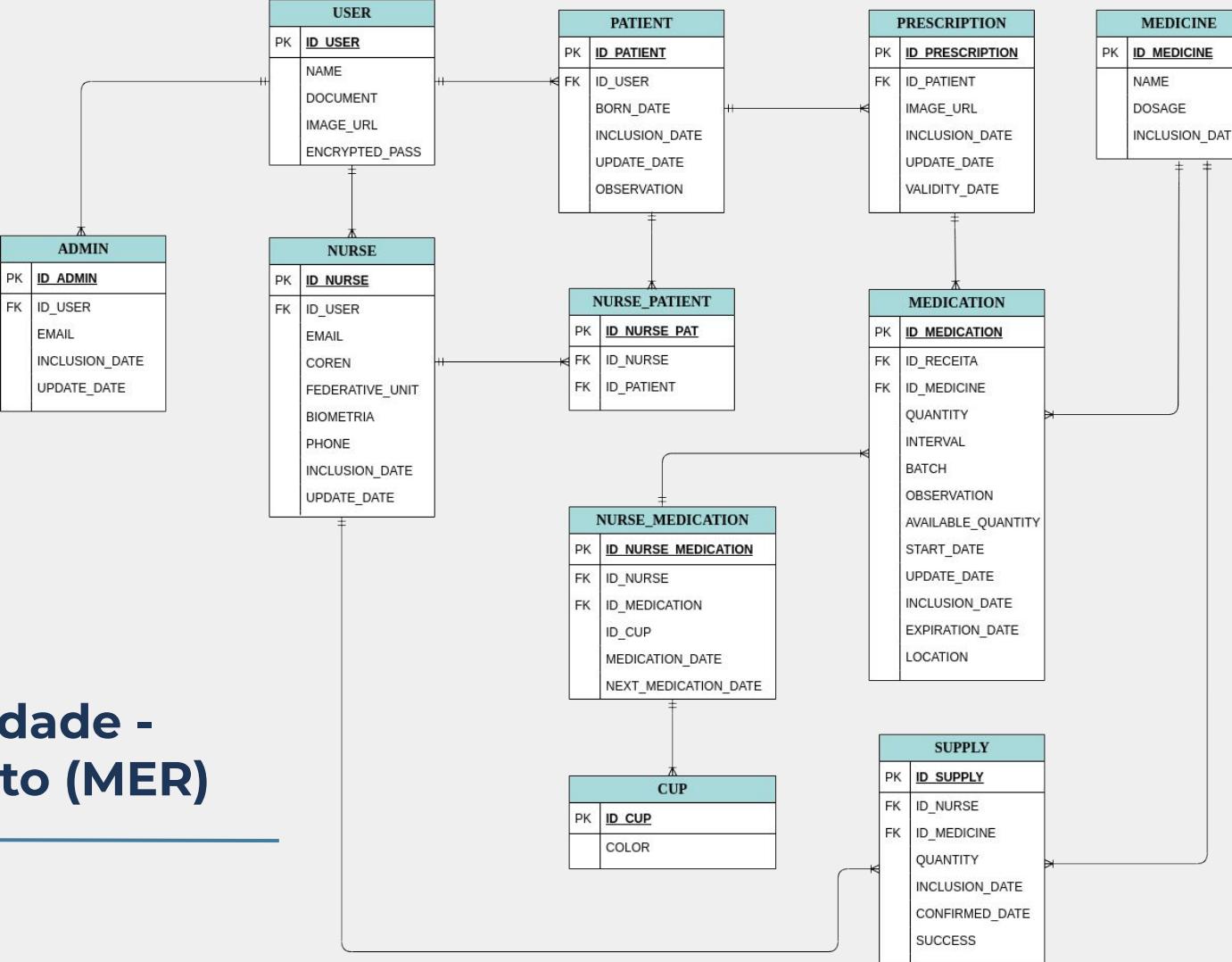
Diagramas de Caso de Uso - Enfermeiro





Diagramas de Caso de Uso - Administrador

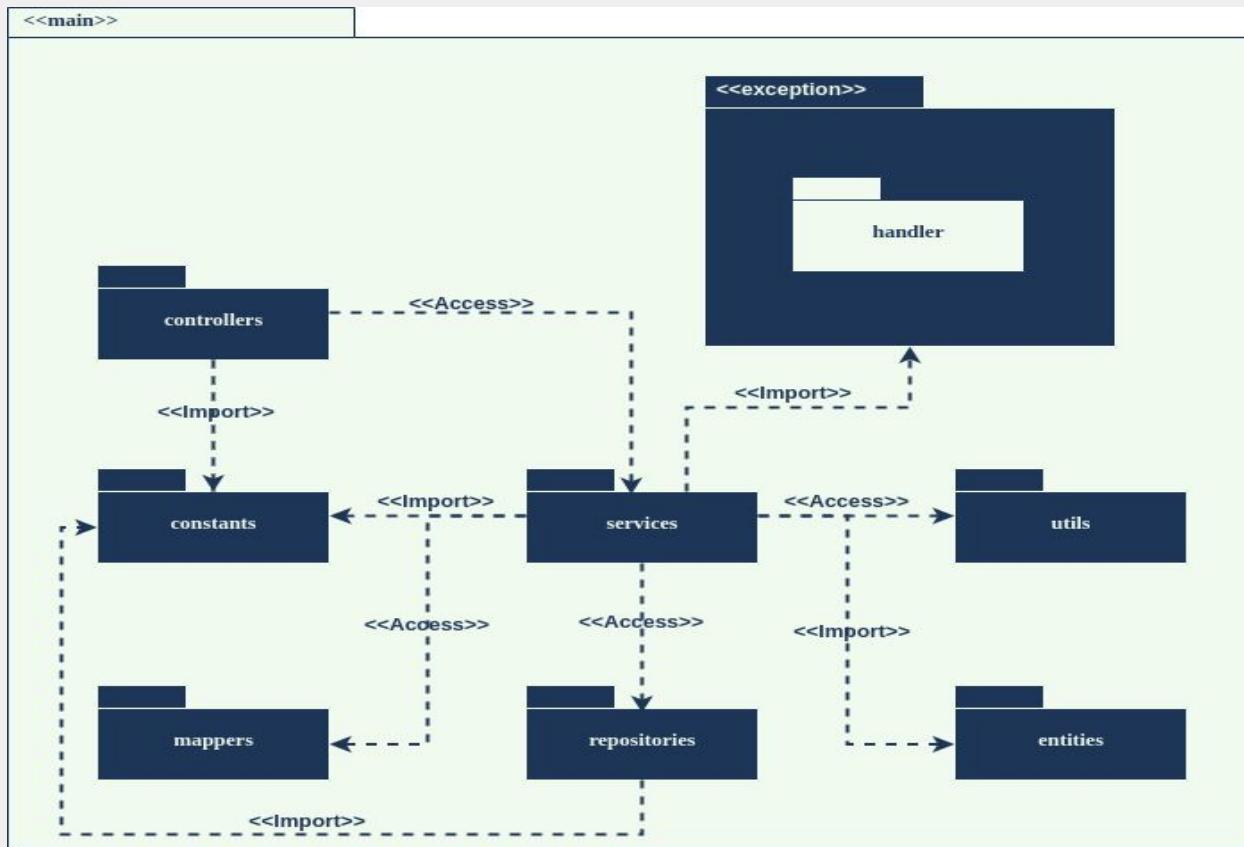




Modelo Entidade - Relacionamento (MER)

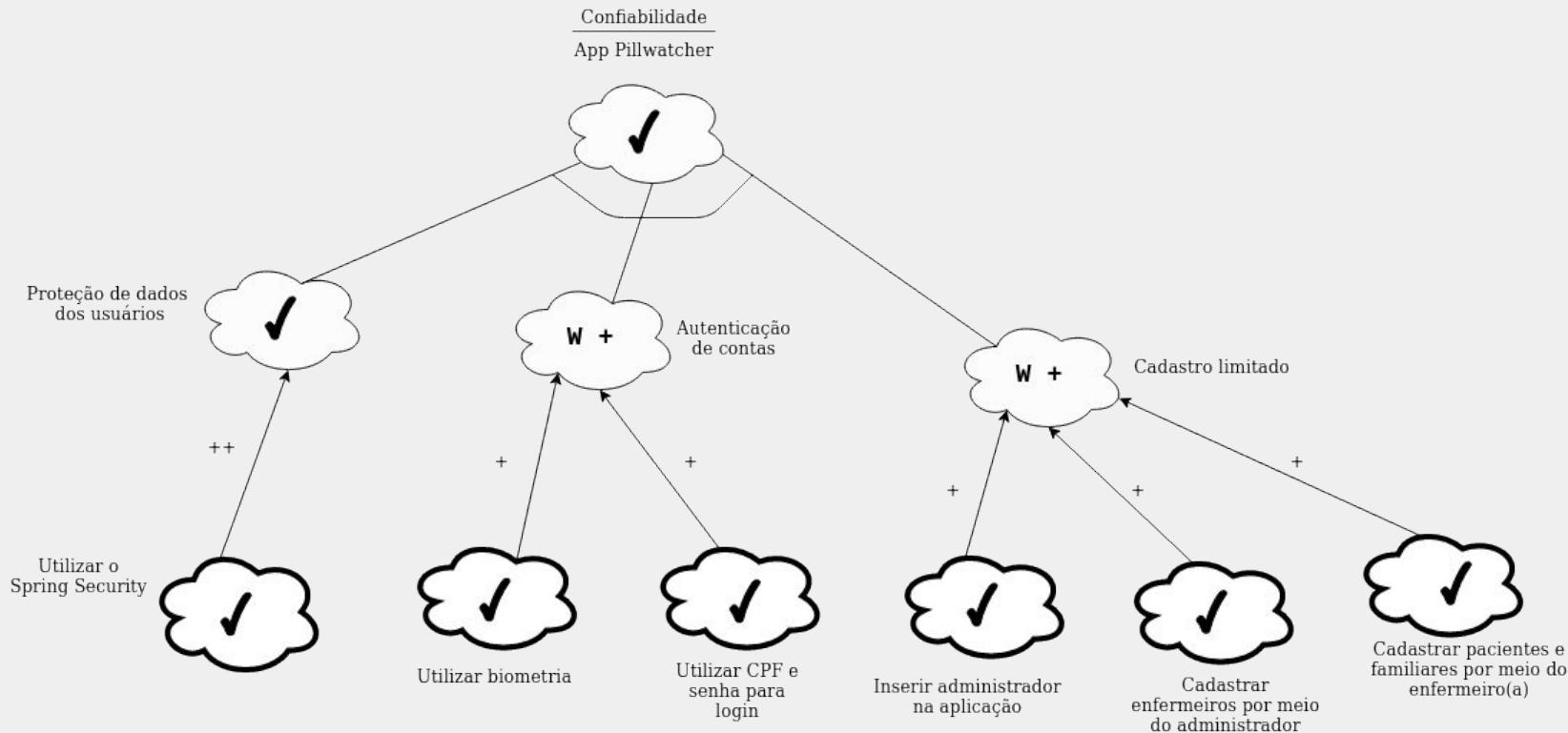


Diagrama de Pacotes



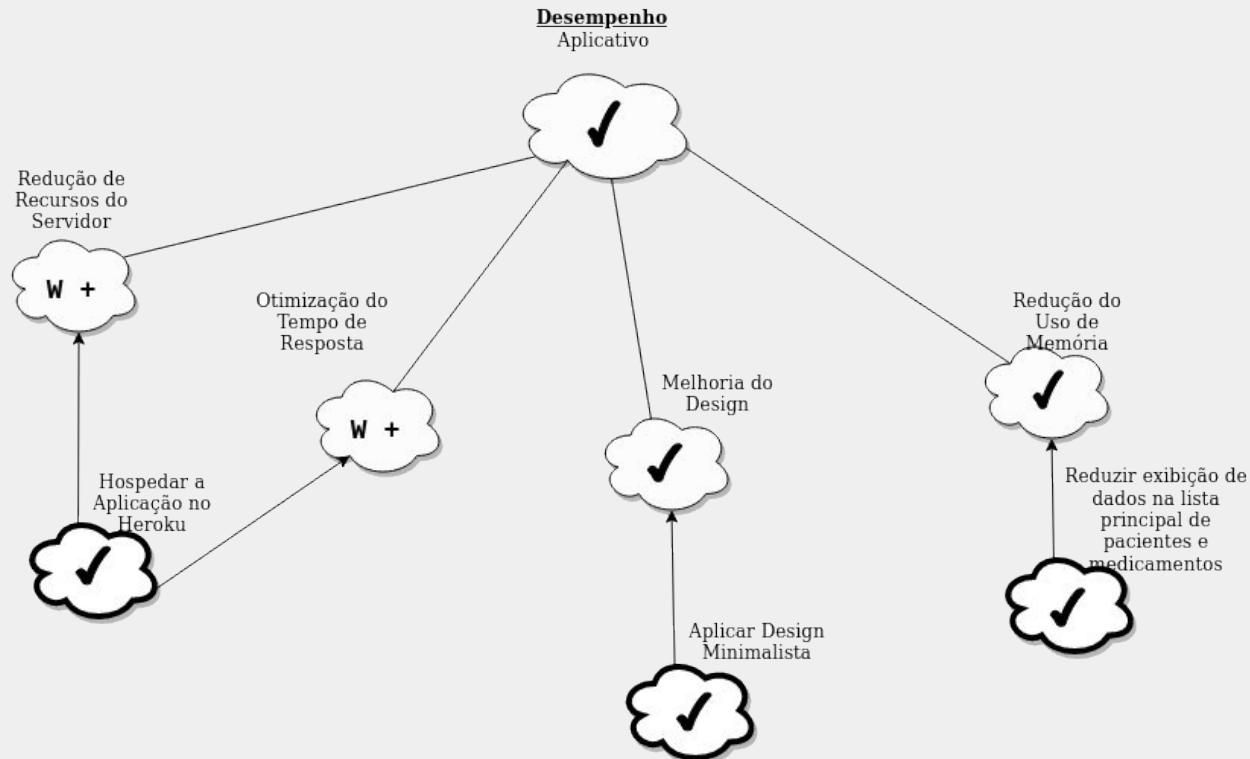


NFRs



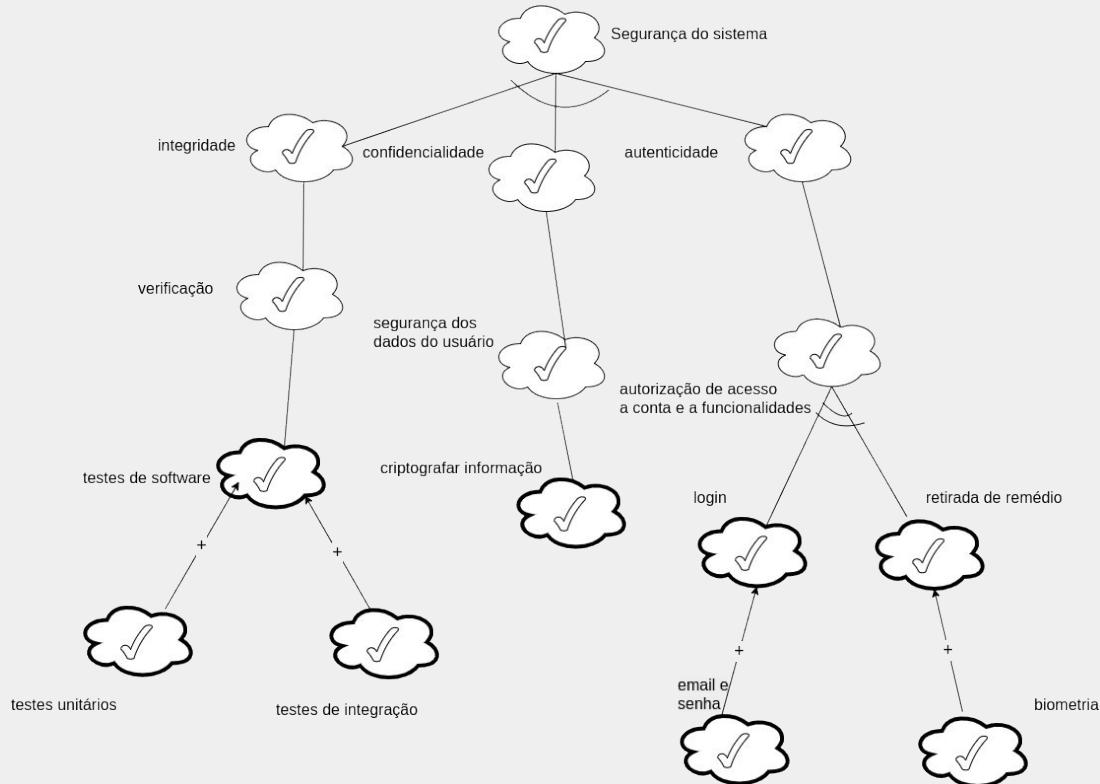


NFRs



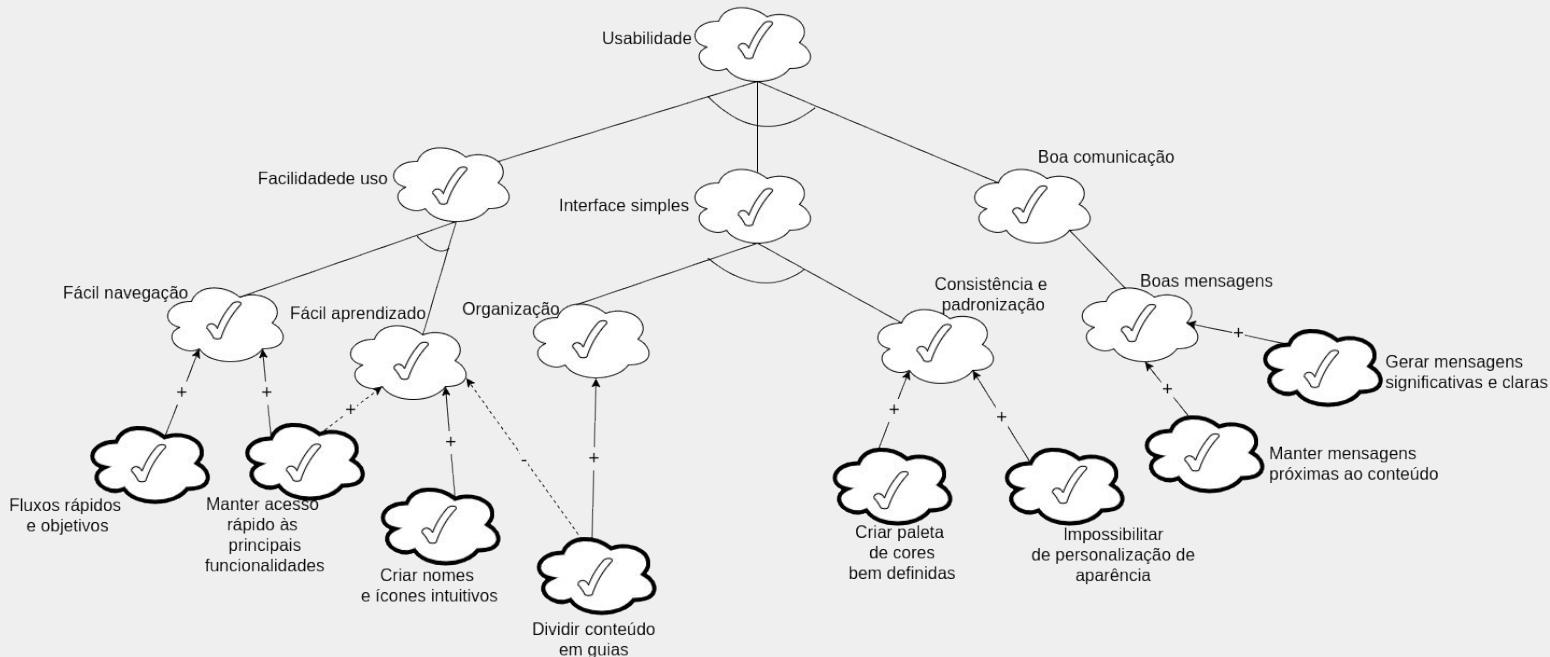


NFRs





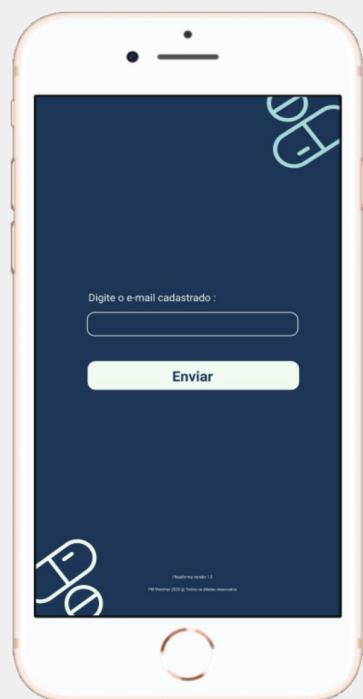
NFRs





Protótipo de Alta Fidelidade

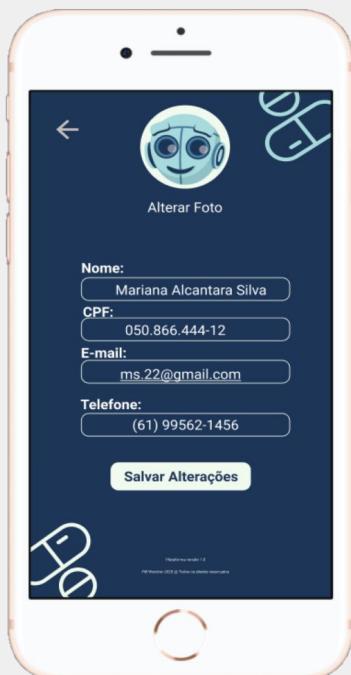
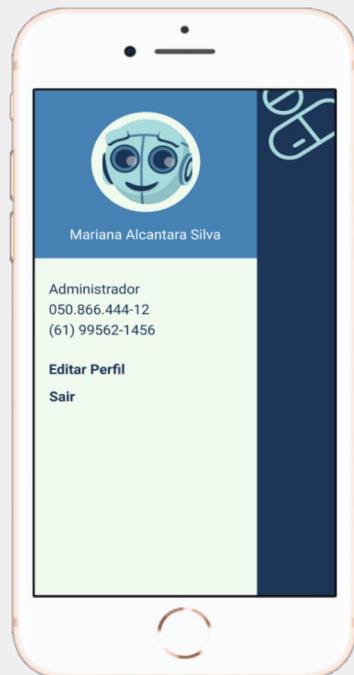
Mock-up das telas de *login*





Protótipo de Alta Fidelidade

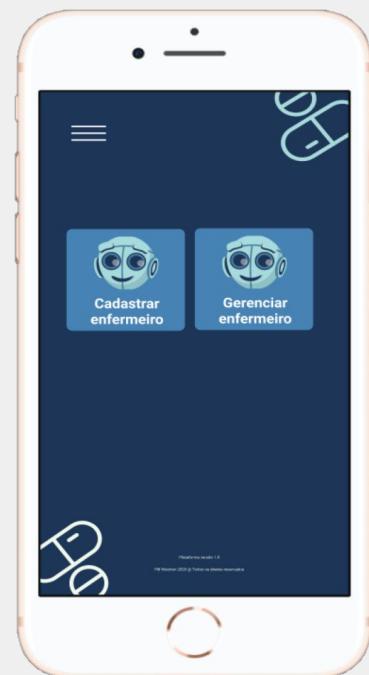
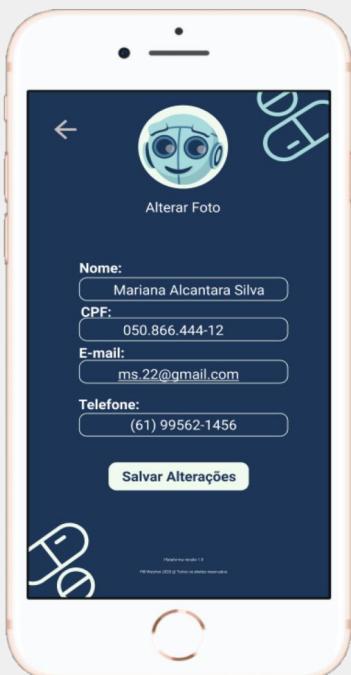
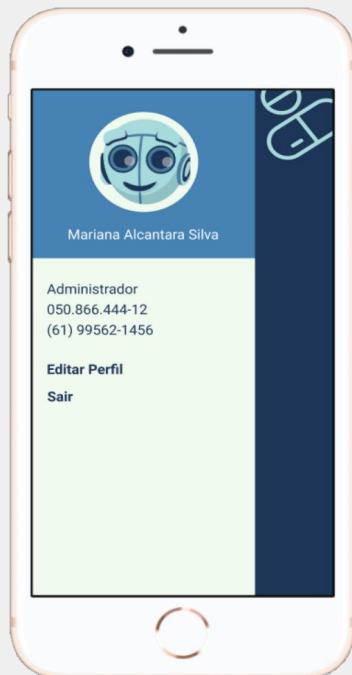
Mock-up das telas de *Administrador*





Protótipo de Alta Fidelidade

Mock-up das telas de Administrador





Protótipo de Alta Fidelidade

Mock-up das telas de *Enfermeiro*





Protótipo de Alta Fidelidade

Mock-up das telas de Paciente

The image displays four iPhone mock-ups illustrating the high-fidelity prototype of a patient-facing mobile application. The app's design features a dark blue header bar with a white capsule icon and a white navigation bar at the top.

- Home Screen:** Shows a circular profile picture of a smiling face, the name "Ana Luísa Gomes", and a summary card with the text "Paciente", "452.233.788-16", and "(61) 99562-1456". Below this are buttons for "Editar Perfil" and "Sair".
- Medication Stock Screen:** Displays two buttons: "Estoque de Medicação" and "Relatório de Medicação".
- Medication Stock Details Screen:** Shows the heading "Estoque De Medicação" and "Paciente: Ana Luisa Gomes". It lists two medications: "Ana Luísa Gomes" (Novalgina and Dipirona), each with a search icon.
- Medication Details Screen:** Shows the heading "Medicação" and "Ana Luísa Gomes". It details a specific medication entry: "Novalgina", "Horário: 12h | 24h", "Dias: segqualsex", "Quantidade Disponível: 9", and "Nível do Estoque: Crítico". A back arrow is visible at the bottom right.



Avanços na Implementação

Front-end:

- 8 telas;
- Postergar desenvolvimento.

Back-end:

- Criação de banco de dados em tempo de execução;
- Estrutura inicial de um API Gateway
- Ambiente Dockerizado para Microsserviço de Administrador, Paciente e Enfermagem;
- Criação e Alteração de um perfil Administrador;
- Busca de um perfil Administrador;
- Deleção de um perfil Administrador;
- Configuração de Integração Contínua para o Microsserviço de Administrador, Paciente e Enfermagem;
- Configuração de Integração Contínua para o API Gateway;
- Configuração de SonarQube para:
 - Microsserviço de Administrador;
 - Microsserviço de Paciente;
 - Microsserviço de Enfermagem.

Avanços na Implementação

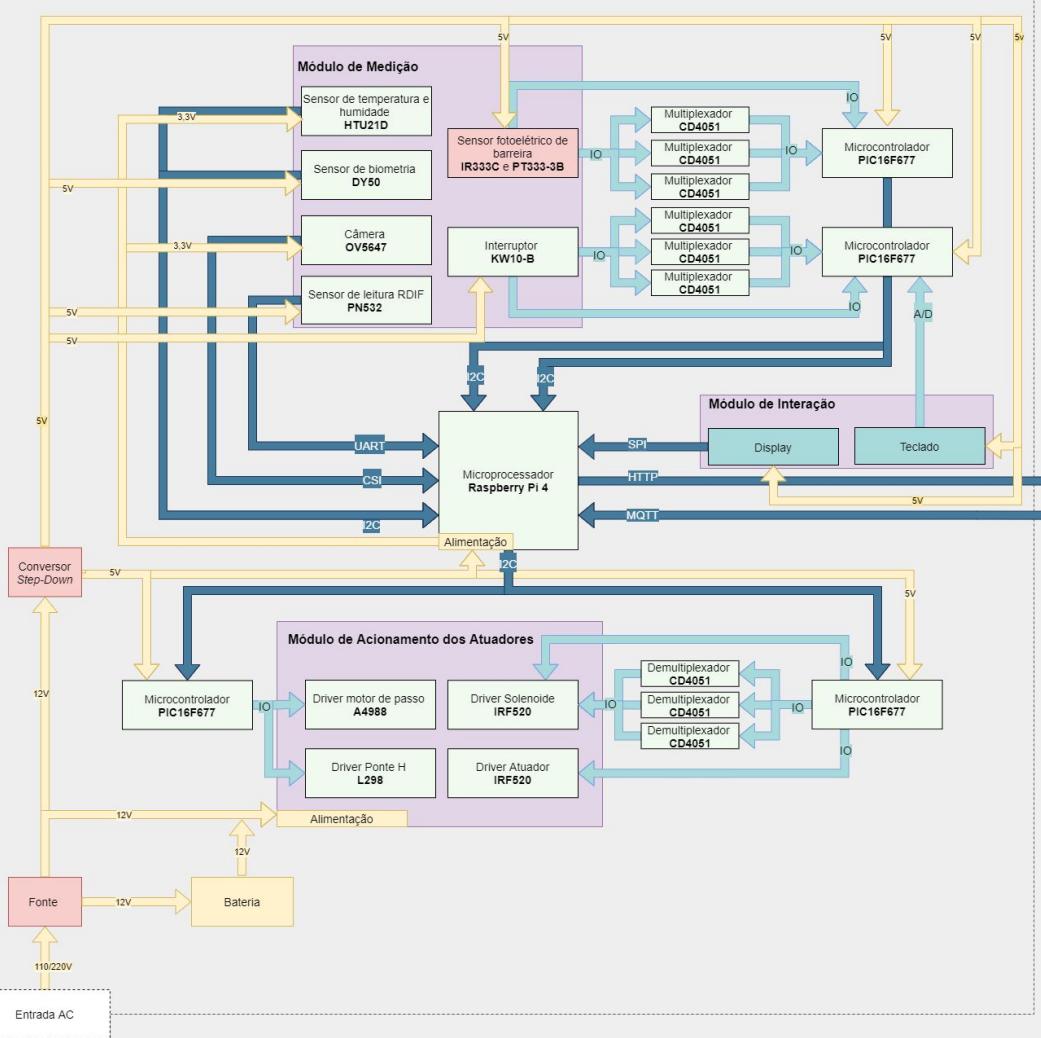
- Configuração de Integração Contínua para o Microsserviço de Enfermagem;
- Configuração de Integração Contínua para o API Gateway;
- Configuração de SonarQube para:
 - Microsserviço de Administrador;
 - Microsserviço de Paciente;
 - Microsserviço de Enfermagem.



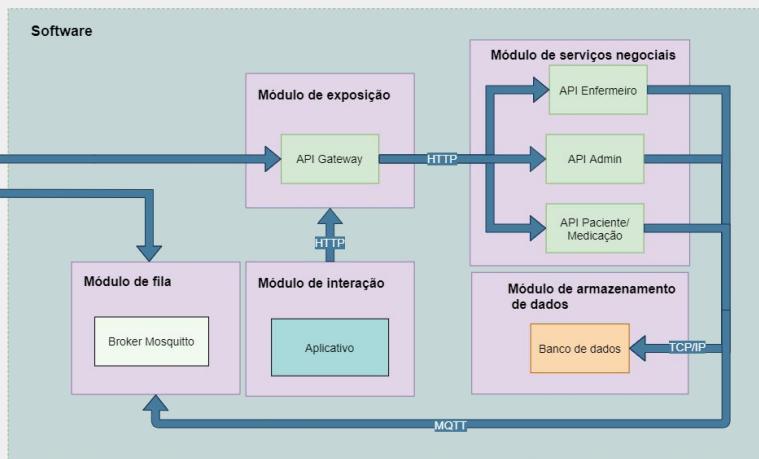
Próximo Palestrante Tiago

Integração

Dispensador

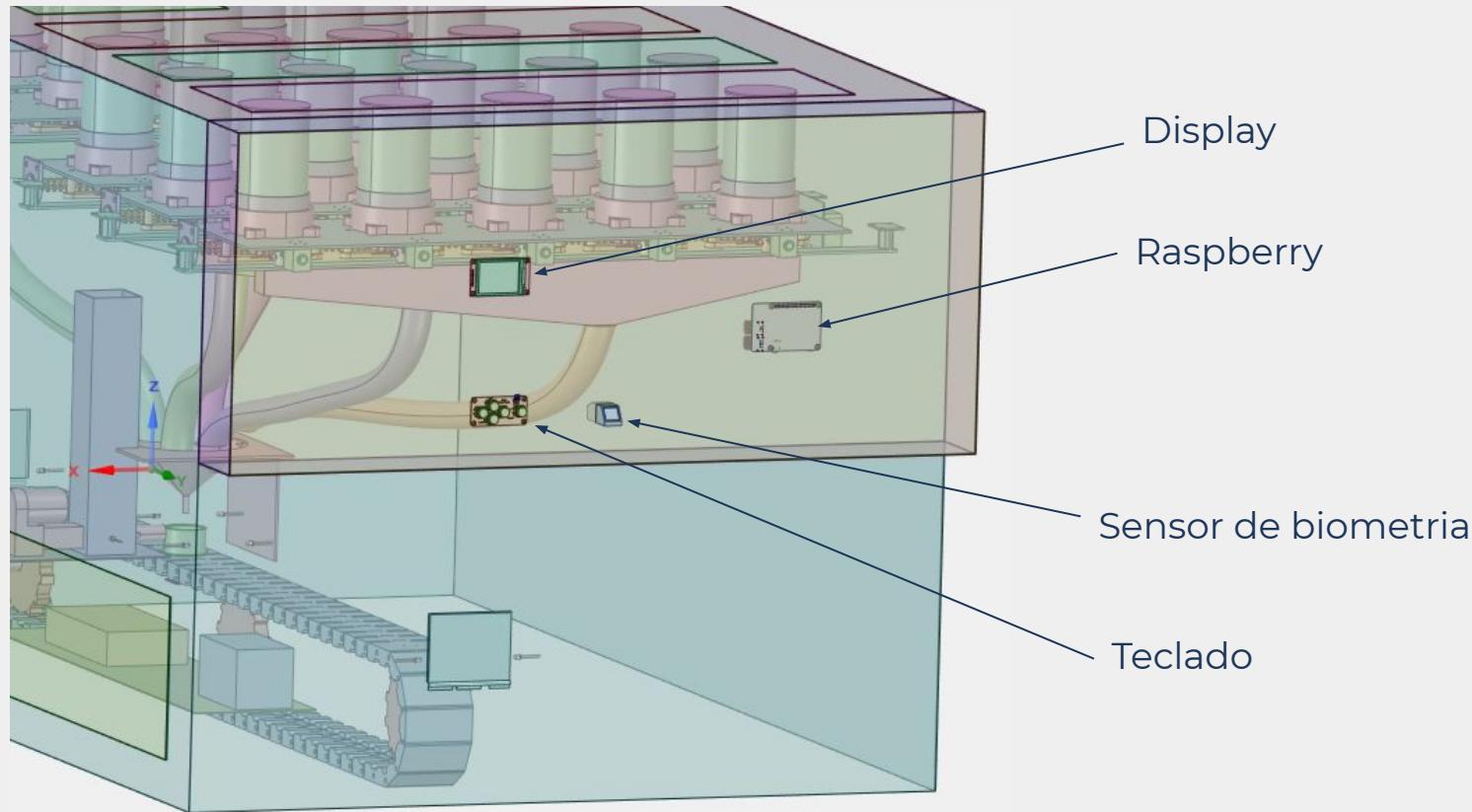


Integração



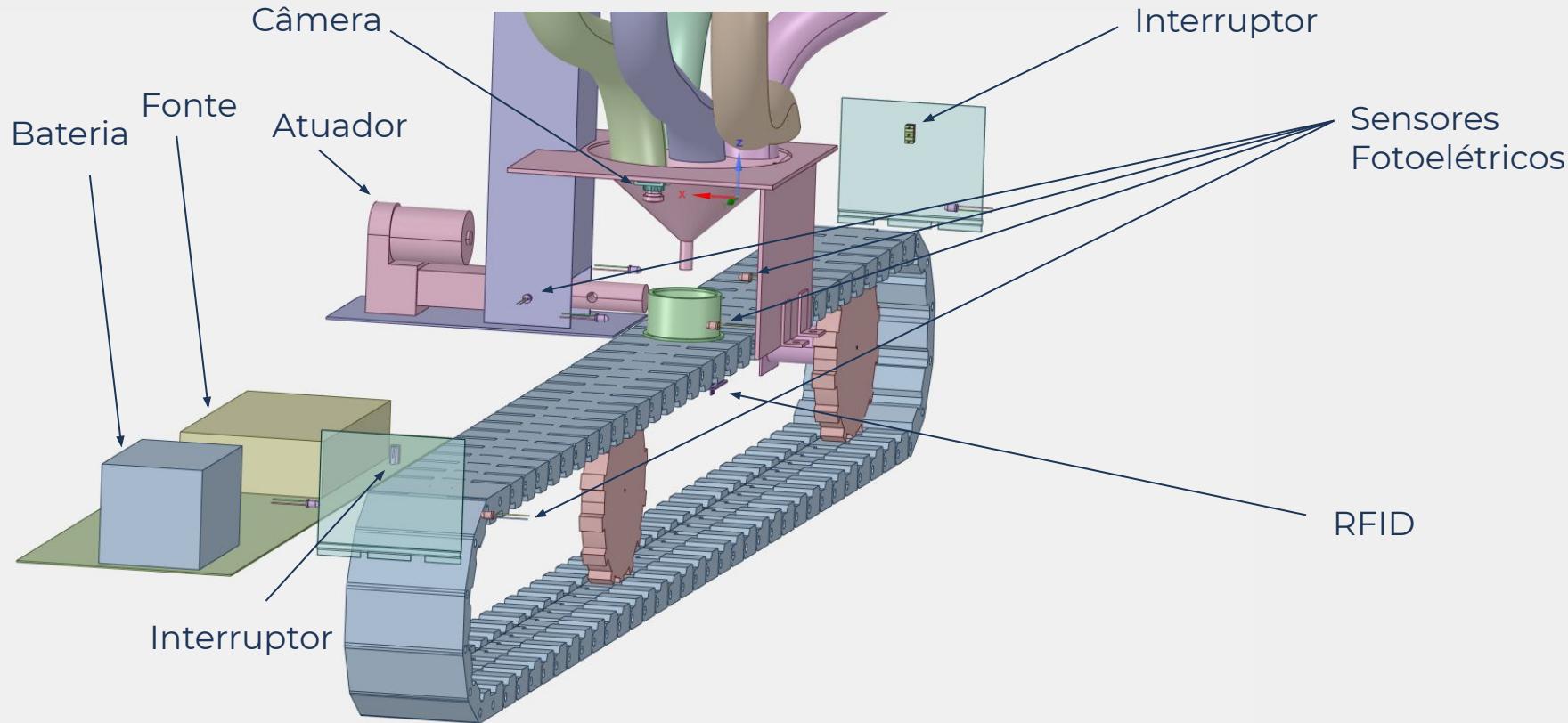


Integração



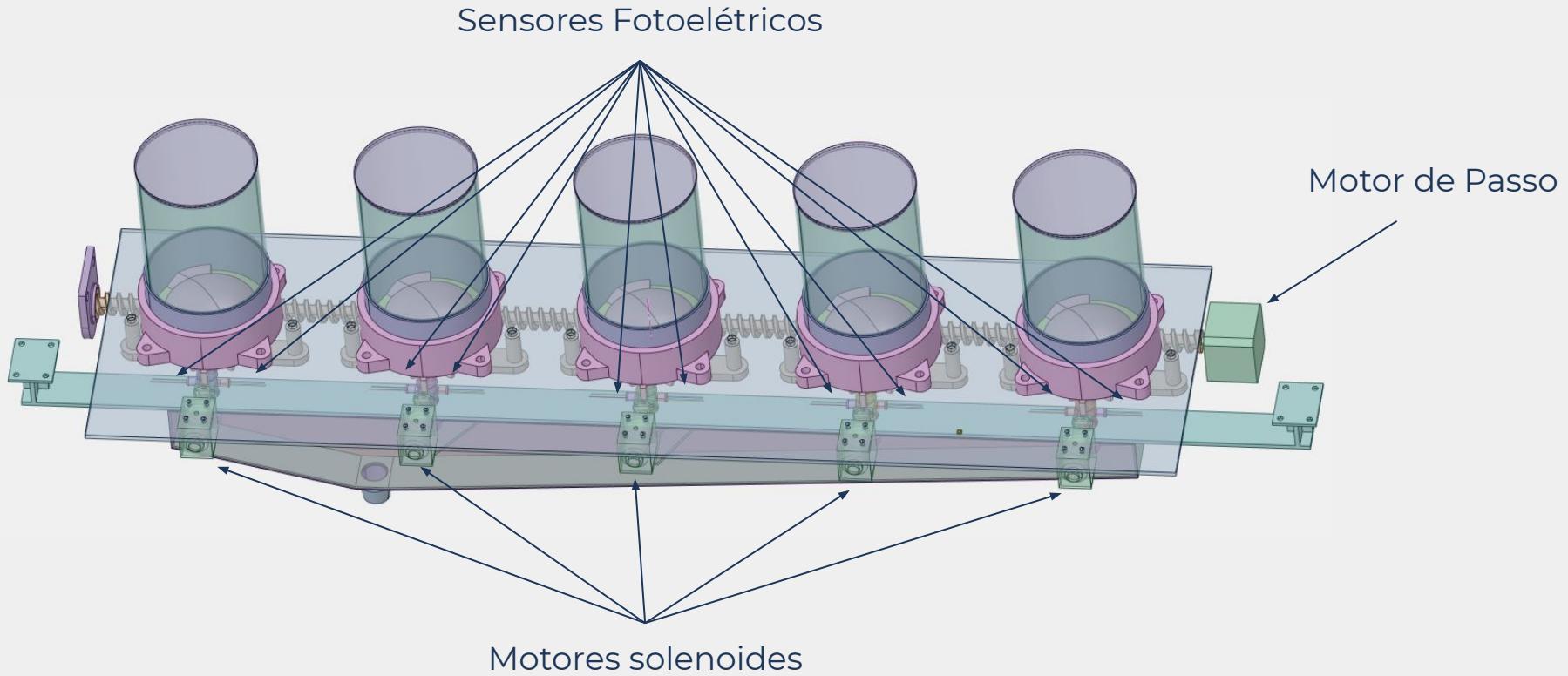


Integração





Integração





Obrigado

