

# Two Axis Rotary Platform for Radar System

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# Goal of the thesis

- Design a two-axis rotary platform purpose build for radar-based applications
- Cost effective platform – off-the-shelf components
- Simple control mechanism
- Timely and deterministic movement

# Hardware

- 3D printed parts
- Use of slirpring
- Optical endstops for homing
- ESP32 + basic stepper driver



3D render

# Software

- Three-layer command processing architecture
  - Communication layer
  - Application layer
  - Movement layer
- Controlled with G-code over serial
- Prescheduling of tasks
- Programming environment – declaration of movement commands sequences

# Conclusion

- Speed control with  $\epsilon = -0.004\%$
- Imperceivable delays during command switching
- Easy integration into other projects
- Practical, affordable alternative to existing commercial systems