





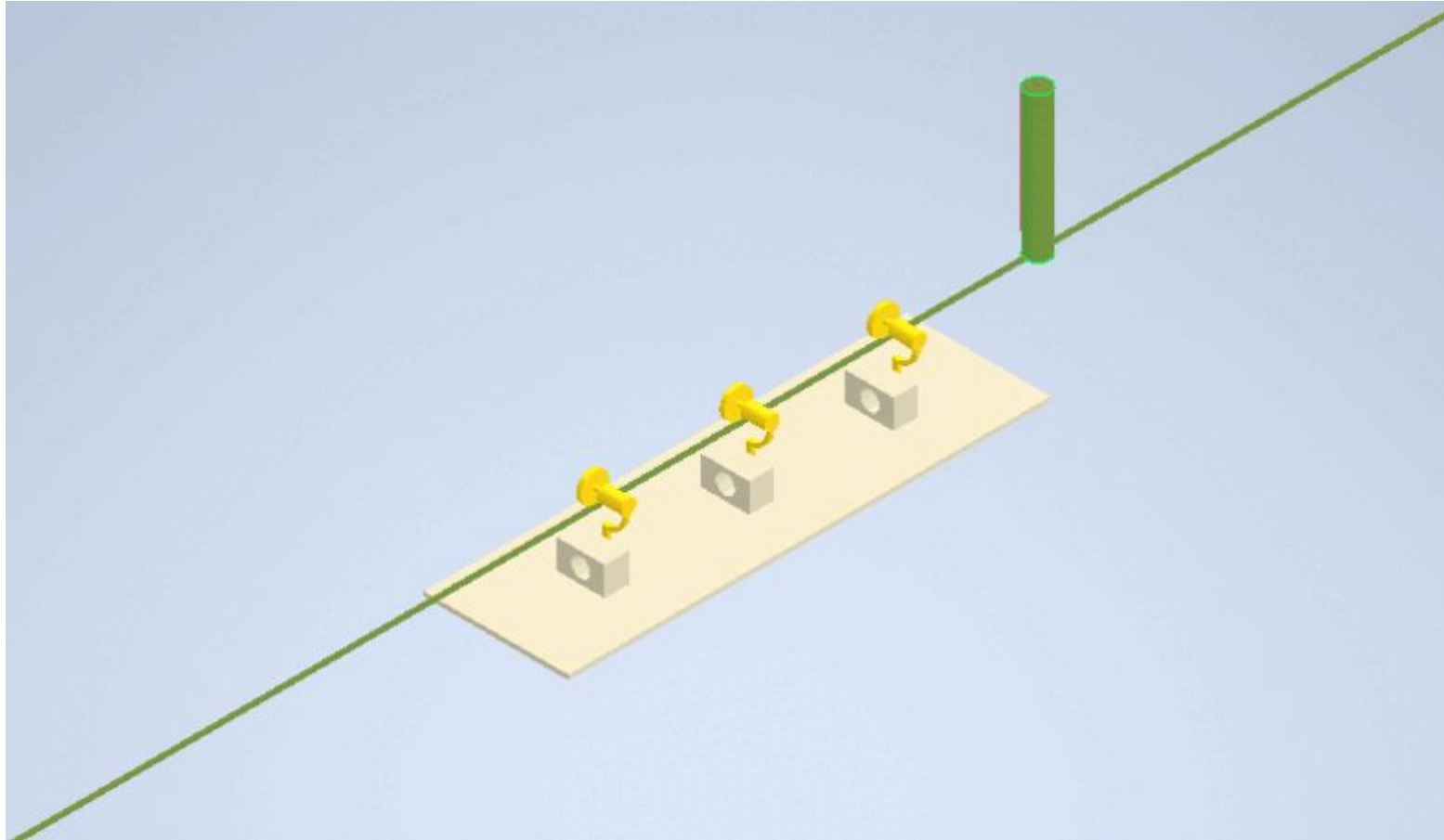
# High-Voltage Electrical Transmission Line Inspection Robot

## **Problem Statement**

Design a robotic device that can autonomously inspect high-voltage transmission wires which can-

- **Traverse wires.**
- **Engage and disengage wheels mechanism .**
- **Maintain stability with a weight balancing mechanism**

# Sequential Engagement Mechanism

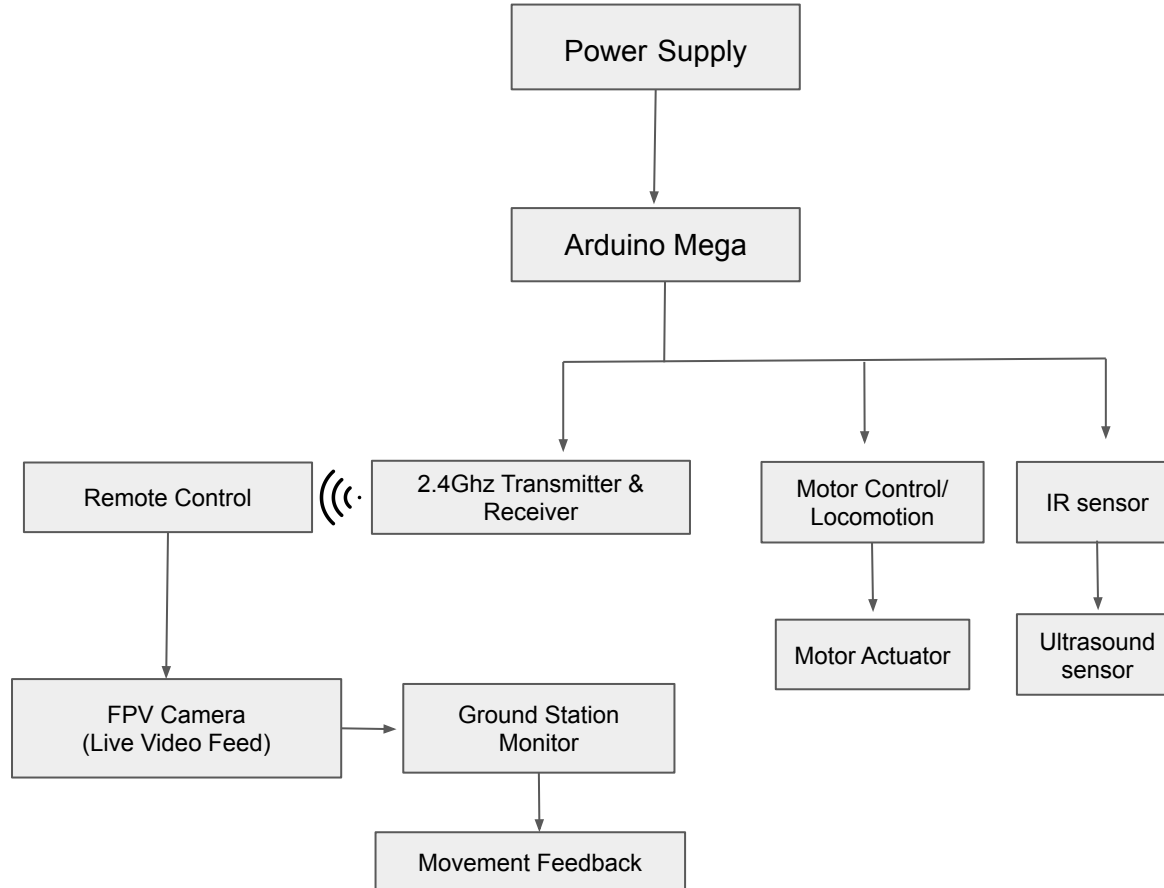


\*  
3-Arms  
on  
chassis

# Inspiration

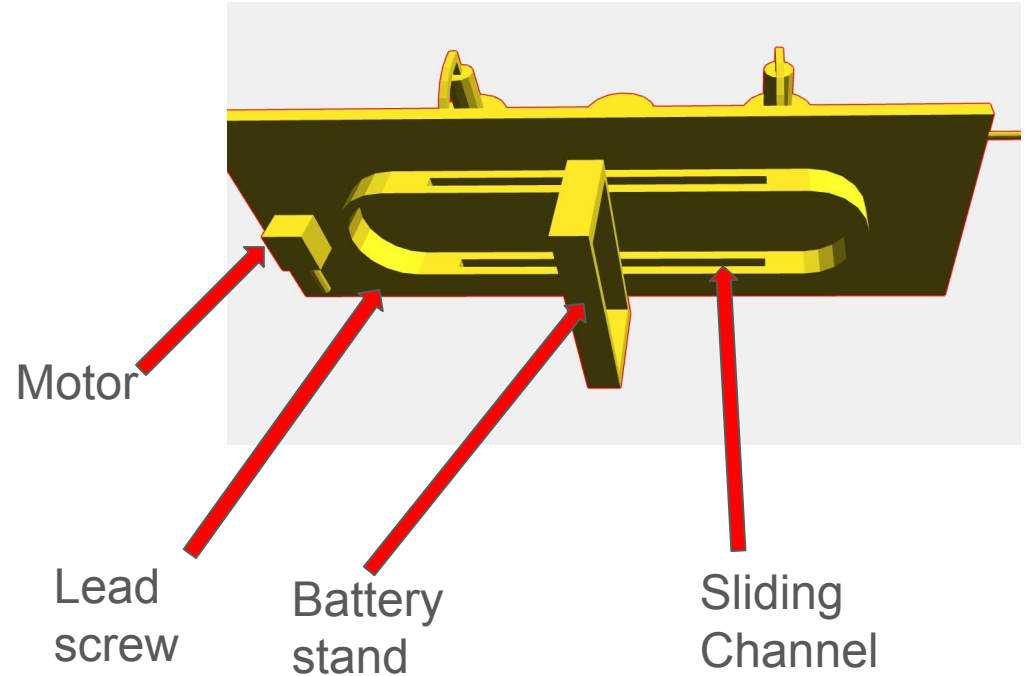


# Mechatronic Architecture



# Weight Balance Mechanism

To avoid tipping, the battery (CoM) is shifted towards the remaining two arms during the crossing process.





# Detailed CAD Design for 1 arm

- Sliding channel to tilt the motor arm to 45 degree and first lift it above 2 cm above the cable
- Supporter wheel will be placed to grip on the wire which would be controlled using servo

