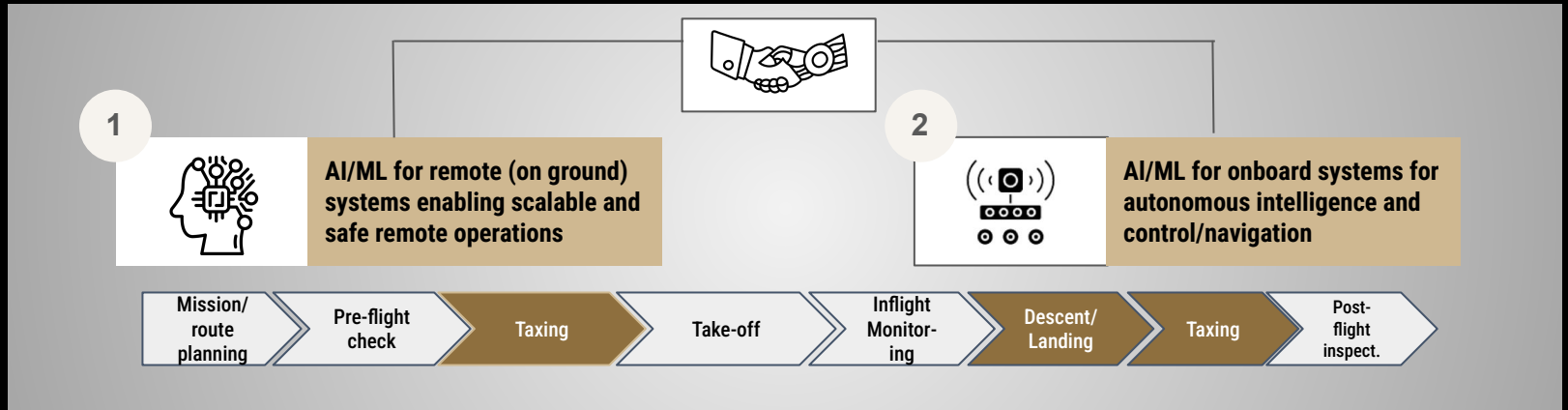


After workshops with Windracers' in UK and our own industry analysis we identified two critical "problems to solve" guiding research in pillar 1 and 2;



### High priority "Problems to solve"

**#1: 1:100**  
One human "operating" 100 Ultras @ same time

**#2: Simple to use**  
"Standard" human operator 100% proficient after two hours training

# These problems should be solved in ongoing and future seed-funded projects



## Problems to solve

### #1: 1:100

One human "operating" 100 Ultras @ same time

### #2: Simple to use

"Standard" human operator 100% proficient after two hours training



## R&D projects (seed funded)



AI/ML for remote real-time human sensing (e.g. cognitive load, situation awareness)



AI/ML for real-time shared intelligence & shared control



Verification of automated landing



Dynamic path-planning



Multi-modal sensing and AI/ML autonomous taxiing



AI/ML enabled taxiing using ATC/language-based navigation



AI/ML for training optimization & real-time expertise modeling



Deep AI/ML for optimized autopilot and aerodynamics prediction



AI/ML for real-time health monitoring and reporting by exception

*Problems to solve in pillar 2 to 5 go beyond remote operations and capture broader business problems of autonomous aviation*

3



AI for supply-chain innovation and optimization

4



AI for meteorological sensing and weather prediction

5



Cybersecurity for AI in digital aviation

**High priority “Problems to solve”**

**#3: Always flying**  
70% asset utilization

**#4: Sensing dynamically**  
Without constraints

**#5: Attack resilience**  
No outsider can take control

*These problems should be solved in ongoing and future seed-funded projects*



### Problems to solve

**#3: Always flying**  
70% asset utilization

**#4: Sensing dynamically**  
Without constraints

**#5: Attack resilience**  
No outsider can take control



### Future R&D projects (seed funded)

- AI/ML for real-time dynamic network optimization
- AI/ML for onboard systems enabling real-time migration sensing
- AI/ML for real-time weather prediction
- AI/ML for dynamic demand analytics and automatic dispatch
- AI/ML for preventive maintenance
- AI/ML for system identification ....
- ....
- ....