

Outline of Flying robots

- Introduction
 - Greetings
 - Welcome
 - Topics
- Overview
 - What are flying robots?
 - Unmanned aircraft systems
 - Don't carry humans
 - Military use
 - Civil use
- History
 - 20th century world conflicts
 - Created framework
 - World War 1
 - Hewitt-Sperry
 - Like flying torpedo
 - To World War 2
 - V-1
 - German army
 - Cruise missile
 - First success
 - Limited success rate
 - 1970s UAV prototype
 - Today's model
 - Cameras
 - Sensors
 - GPS
- Characteristics
 - Complex classification
 - Classified by properties
 - Different types
 - Fixed wing
 - Rotary-wing
 - Lighter than air
 - Convertibles
 - Bio-inspired
- Basics of Aerodynamics and Flight Mechanics
 - Fundamental knowledge is needed
 - What needs to be considerate in the planning?

- Aerodynamics lift
 - Generated by motion
- Aerostatics lift
 - Generated only by static properties
- Airflow
 - Three dimensional
 - Unsteady
- Viscous effects
- Need to calculate lift and drag
- Propellers and rotors
- Challenges
 - Limitations
 - Weight
 - Power
 - Components
 - Sensors
 - Processors
 - Cameras
 - Algorithms
 - Difference with ground vehicles
 - Control
 - Flight behavior
 - Failures
 - Communication between components
- Applications
 - Control the robot
 - Autonomy
 - Different tasks
 - Remote sensing
 - Disaster response
 - Surveillance
 - Search and rescue
 - Image acquisition
 - Communications
 - Transportation
 - Payload delivery
- Conclusion
 - Lots of information is needed