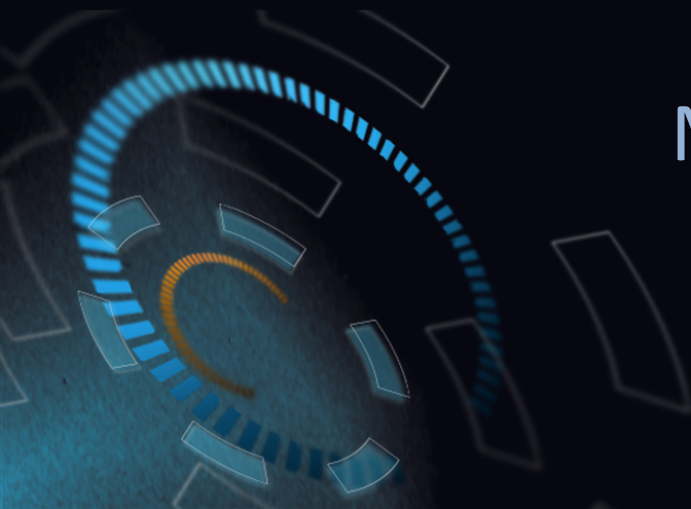


Role Allocation for Humans & Autonomous Systems

Missy Cummings

Duke University





HAL

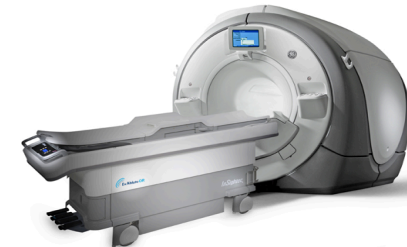
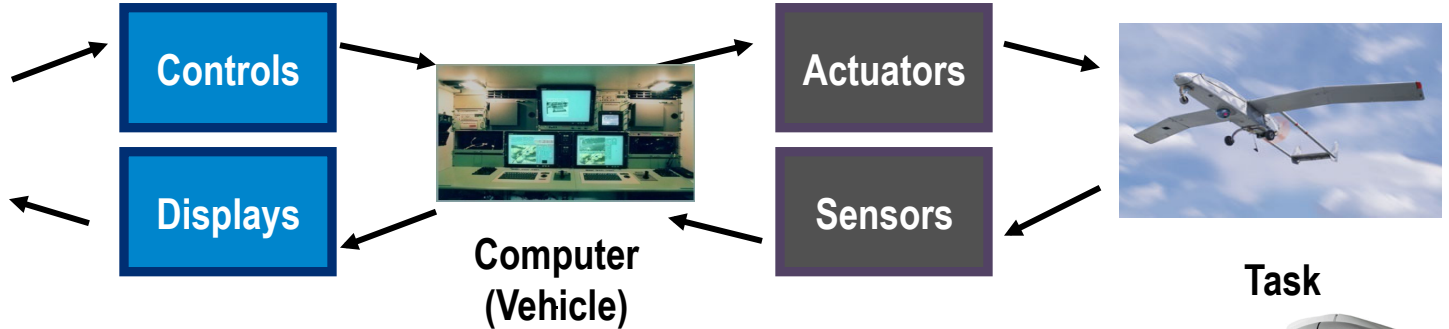


Human Supervisory Control

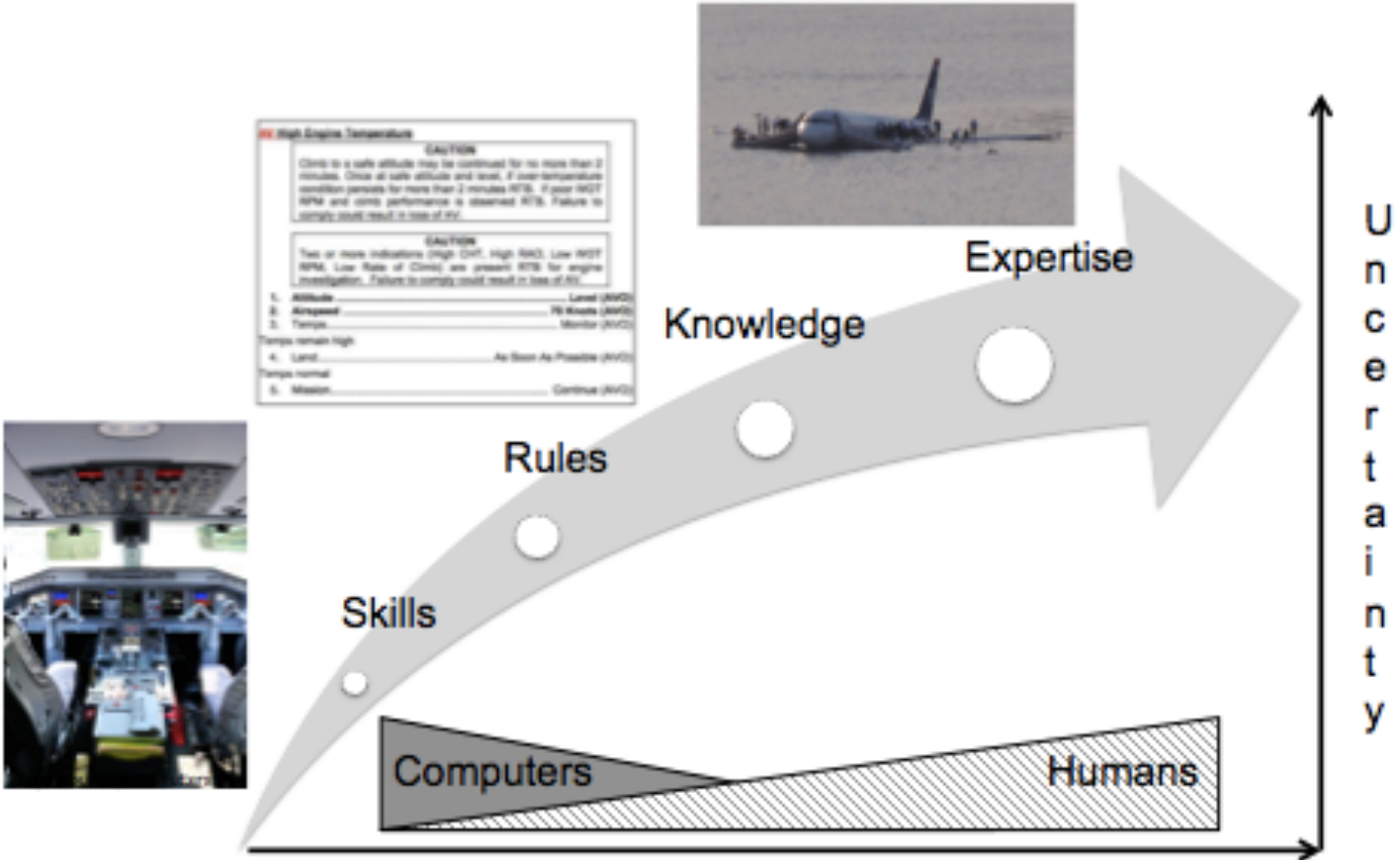
- Complex, time-pressured, high risk domains
- Systems require embedded automation/ autonomy with human supervision
- Individuals & teams



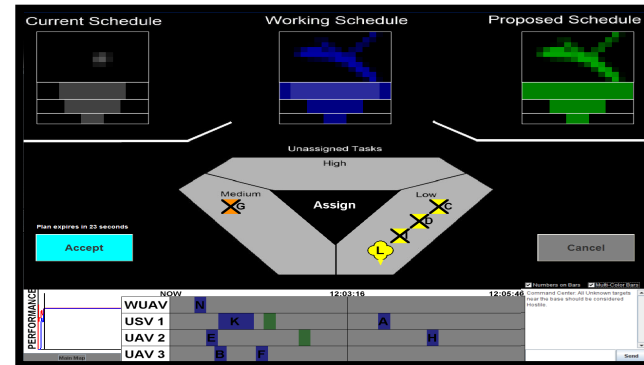
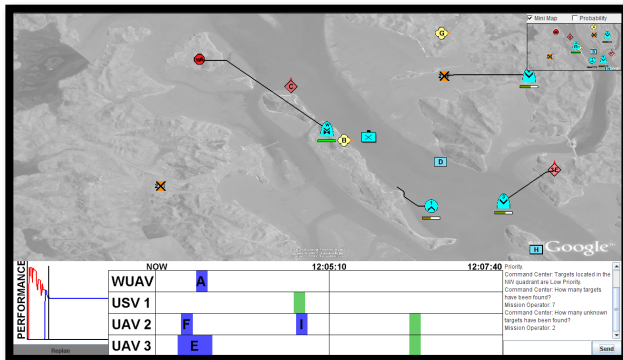
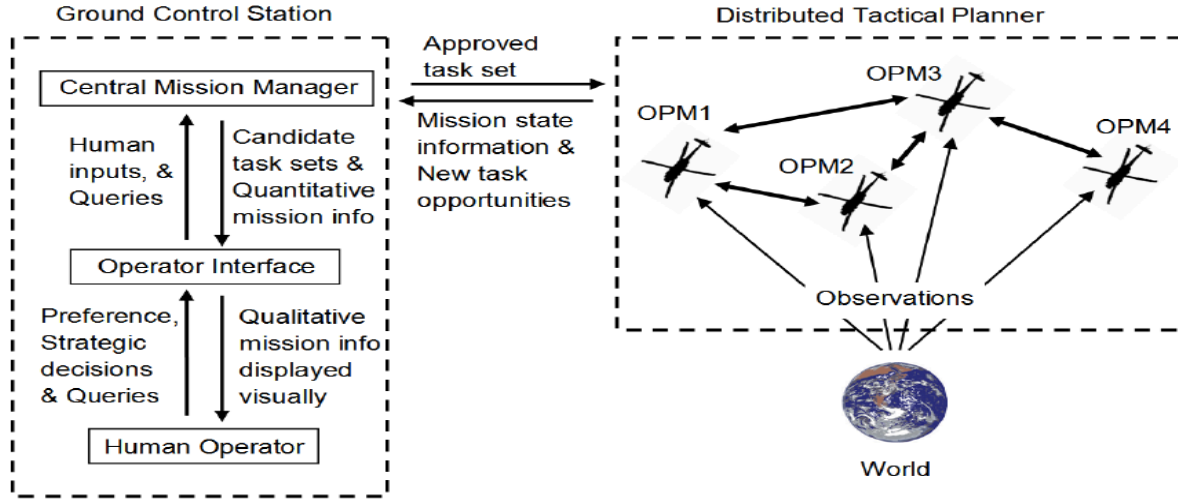
Human Operator
(Supervisor)



SRK Taxonomy

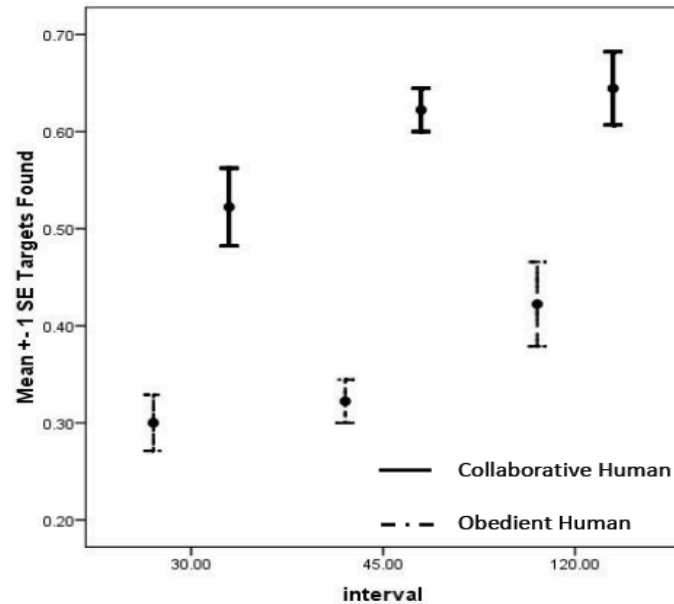


Humans as coaches of autonomy

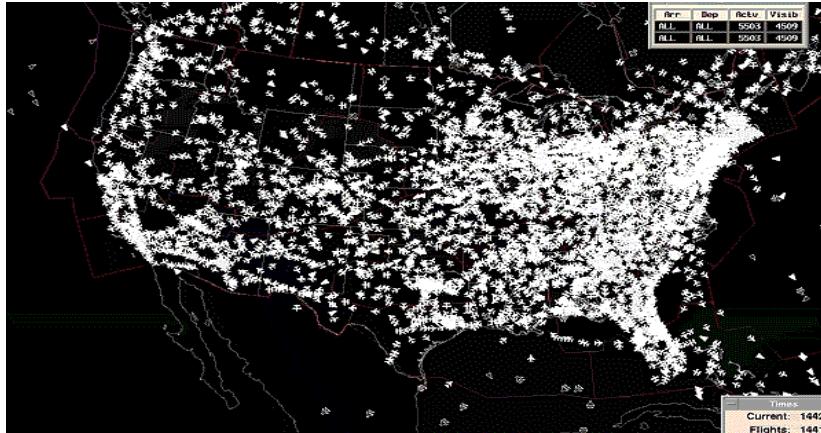


Humans as coaches of autonomy

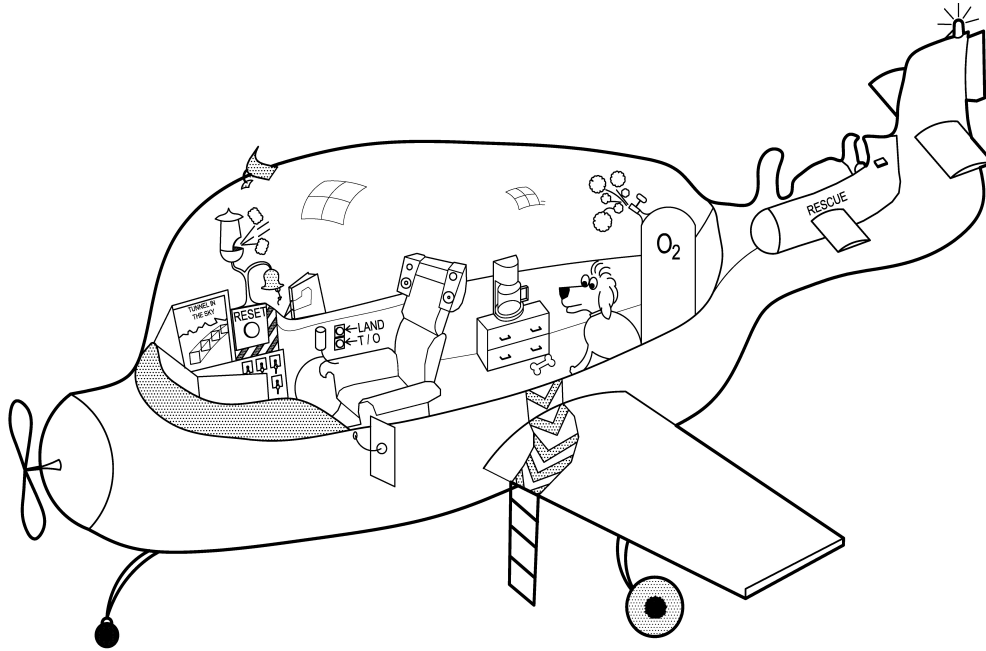
| | | Agent(s) | | |
|------|-----------------------|----------------|--------------------|-----------|
| | | Automation Led | Human + Automation | Human Led |
| Task | Search | | ✓ | |
| | Target Identification | | | ✓ |
| | Target Track | ✓ | | |
| | Neutralize Hostiles | | ✓ | |



Low Altitude, High Density Air Traffic Management



The Future of Single Pilot Operations?



The Pitfalls of Autonomy on the Road



The Inevitable Merge?



Questions?