Automation Breakout Session

12 Important Issues

- More attention and understanding of allocation of tasks is required including the appropriate role of the human (11)

- Aren’t using/applying a structured approach or language for addressing or discussing automated functions or tasks (11)
  - May have several to address levels of automation to build on

- Need to define minimum level of automation required because the pilot is remote from the airplane (10)

- Need to define the minimum level of information that needs to be processed by the automation and provided to the pilot including information to monitor the system (9)

- Need to consider limitations of automated systems that we already know from manned vehicles (reliability, trust, over-reliance, etc) (8)

- Need to understand and address the priority of tasks automated (6)
  - Focus on high level first but need low level first

- Interface and logic is not designed effectively to maintain the full control envelope and the transition between levels of automation (5)

- Automated systems need to be able to integrate and be compatible with manned operations (4)

- Need to develop a method for determining performance requirements for automated functions and contribution of the human (4)

- Need to think through the legal and philosophical issues of operating unmanned vehicles at high levels of automation (3)
  - Who is responsible?
  - What are the implications of responsibility
    - Legal
    - Regulatory
    - Public acceptance

- Need to understand what needs to be automated differently to go to a single-pilot (or minimum flight crew) system (2)

- Assuming that automation can be used can lead to poor decisions before they are justified (2)
  - Fewer operators per UAV,
  - multiple UAVs per operator
  - requirements for multi-tasking