Federal Aviation Administration Research & Development Landscapes 2020 - 2030

Research, Engineering and Development Advisory Committee (REDAC)

Sub-Committee Workbook for:
Human Factors

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General Instructions

List of Research Drivers

Research Drivers Worksheets

Blank Worksheets for Any Additional Research Drivers

General Instructions

In the context of your REDAC subcommittee:

- Review the list of research drivers on the following page and identify any missing items that you feel are relevant. Blank pages are provided in the back of the workbook for the Subcommittee to include these additional drivers.
- Using the list of research drivers on the following page, identify the ones that are relevant to your Subcommittee.
- Then, using the attached sheets (one for each research driver that you've identified), please provide feedback on the following:
 - a. Identify the characteristics or individual components of each driver and the timeframe to maturity.
 - b. Identify if the driver presents challenges that the FAA should pay attention to.
 - c. Identify entities (academia, government or industry) that are currently conducting work related to this driver.

Provide any additional context that you believe is relevant.

Research Drivers

- 1. Supersonic Flight
- 2. Urban Air Mobility
- 3. Growth of Mixed Operations (Piloted, Autonomous, Unmanned)
- 4. New Mission Types
- 5. Non-Traditional NAS Access Points
- 6. Space Operations
- 7. Enable Routine Small UAS Operations Beyond Visual Line of Sight (BVLOS)
- 8. Autonomous ground service equipment at airports
- 9. Aircraft Command and Control Using Automation and Remote Sensing Technology
- 10. New Vehicles or their Components Which Make Use of New Technologies, Software, or Materials
- 11. Certification using New Technologies, Standards, or Processes
- 12. Remote/Virtual Technologies
- 13. Advances in Electric or Hybrid Electric Propulsion
- 14. Future Fuel Technologies
- 15. New Technologies to Airport Pavement Infrastructure and Design
- 16. Information Assurance and Security for All Operations (cyber-security)
- 17. Big Data Analytics and Techniques
- 18. Human-Machine Teaming and New Technology Interfaces
- 19. Artificial Intelligence
- 20. Increased Connectivity by Cyber-Physical Systems (Internet of Things Technologies)
- 21. Crowd Sourcing Weather Data
- 22. Advancement in Position, Navigation, & Timing Technology
- 23. Risk-Based Decision-Making techniques and analytics
- 24. Infrastructure Resiliency and Continuity of Operations
- 25. New Medical Technologies and New Substances (Medications, Drugs, Etc.)

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1	Supersonic Flight	
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11	Certification using New Technologies, Standards, or	Processes
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16	Information Assurance and Security for All Operations (cyber-security)
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19	Artificial Intelligence	
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