

REDAC Subcommittee on Human Factors SUMMER/FALL 2020 | MINUTES

Meeting date | *August 18-19, 2020*

Meeting location | *Remote (In-Person meeting cancelled due to COVID-19)*

Purpose: Review the RE&D accomplishments and expectations for fiscal year 2020

Facilitator: Dr. Bill Kaliardos, DFO

All releasable briefings can be found at: <https://redacdb.faa.gov/browse.cfm>. See HF Subcommittee, August 2020 meeting folder.

Minutes from meeting:

Tuesday, August 18th, 2020

Welcome / Introductions | **Presenters** *Dr. Barbara Holder, HF Subcommittee Chair, Dr. Bill Kaliardos, DFO*

Drs. Bill Kaliardos and Barbara Holder introduced themselves and welcomed the subcommittee and other attendees. The DFO reviewed the agenda and the meeting was called to order.

Update from Full Committee Meeting | **Presenter** *Dr. Barbara Holder, HF Subcommittee Chair*

Dr. Barbara Holder began briefing introductory slides. She provided an update from the Full REDAC Meeting before reviewing the three Human Factors Findings and Recommendations (F&Rs):

1. Urban/Advanced Air Mobility (AAM) Research and Definition
2. Access to FAA Research Artifacts
3. The Proposed Prioritization Process

Dr. Holder continued by providing overviews of the briefings given at the Full REDAC meeting. She then explained the function of the REDAC committees as well as the various goals of the Human Factors REDAC meeting. Dr. Holder's briefing can be accessed using the link above.

REDAC Mission & Opening Remarks | **Presenter** *Shelly Yak, FAA Director of William J. Hughes Technical Center, REDAC Co-Chair*

Shelly Yak welcomed the subcommittee and gave opening remarks. She provided a COVID update from the Tech Center, explaining that back to work on-site will be a gradual phase back. She discussed the Research Landscape and how it will be used to inform the FY22 budget process before moving on to Steve Summer for further explanation of the Landscape document.

FAA Research Landscape Update (Summary) | **Presenter** *Steve Summer, FAA William J. Hughes Technical Center, Research Portfolio Branch, Manager*

Steve Summer updated the subcommittee on the FAA Research Landscape. He began explaining the purpose of the Landscape before reviewing the listing of categorized Research & Development Drivers. Dr. Holder noted that it was difficult to notice Human Factors in the listing of Drivers, expressing concern that Human Factors may get lost if not specifically called out. Steve explained Human Factors issues are often

cross-cutting, and Shelly recommended the subcommittee brainstorm on how Human Factors can be better accounted for in the listing of drivers. Carla Hackworth noted that herself, Tara Holmes, and Kenneth Allendoerfer, and have been reviewing the drivers. A subcommittee member noted that there should be enablers that account for Human-System Integration issues. The remained of the discussion on the Research Landscape was left for Day Two. Steve's briefing can be accessed using the above link.

Flight Deck Human Factors Research, NextGen | Presenter *Dr. Victor Quach, FAA Flight Deck NextGen HF Portfolio Manager*

Dr. Victor Quach briefed the subcommittee on the NextGen Flight Deck Human Factors research. He began with an overview of the BLI before briefing the FY20 research accomplishments and ongoing and anticipated research in FY21+. Dr. Quach's briefing can be accessed using the above link.

Flight Deck Human Factors Research, Core | Presenter *Dr. Chuck Perala, FAA Flight Deck Core HF Portfolio Manager*

Dr. Chuck Perala briefed the subcommittee on the Core Flight Deck Human Factors research. He began with an overview of the BLI before briefing the FY20 research accomplishments and ongoing and anticipated research in FY21+. Dr. Holder inquired about the impact of COVID on research activity and how that might affect funding. Mark Orr noted that there is a three year obligation before the funding will go back to the Treasury. Dr. Perala's briefing can be accessed using the above link.

ATC Human Factors Research, NextGen | Presenter *Karl Kaufmann, ATC NextGen HF Portfolio Manager*

Karl Kaufmann briefed the subcommittee on the NextGen ATC Human Factors research. He began with an overview of the BLI before briefing the FY20 research accomplishments and ongoing and anticipated research in FY21+. Chris DeSenti (MITRE) asked about the Highly Automated Vehicled (HAV) work, noting that MITRE has internal research it can share that might assist the work. Chris made an action to send that information to Karl. Karl's briefing can be accessed using the above link.

ATC Human Factors Research, Core | Presenter *Dan Herschler, ATC Core HF Portfolio Manager*

Dan Herschler briefed the subcommittee on the Core ATC Human Factors research. He began with an overview of the BLI before briefing the FY20 research accomplishments and ongoing and anticipated research in FY21+. Dan's briefing can be accessed using the above link.

Lunch Break - 1

Today's automated production vehicles: are we on target or missing the mark? | Presenter Dr. Bryan Reimer, Research Scientist, MIT

Dr. Bryan Reimer briefed the subcommittee on his research in Automated Production Vehicles. He began explaining the history of driverless cars, noting its history is almost 100 years old. He reviewed his research in depth in his briefing, which can be accessed using the link above. Concluding his briefing, an attendee asked if any consideration has been given to HUD in cars. Dr. Reimer noted there is not much research there, explaining that cost of research is very different in aviation than in automobiles. Another attendee asked if the car manufacturers developed their own operating systems for autonomous vehicles. Dr. Reimer answered that Google is leading the industry in this area. A subcommittee member noted that in terms of ease of introduction, Urban Air Mobility may be easier as the system can be designed from the ground up. For autonomous vehicles, legacy cars on the road will be very difficult to work with. Dr. Reimer concluded his briefing, noting it will be available to be posted in the HF REDAC repository.

Lunch Break - 2

COVID-19 Updates / F&R Brainstorming / HW Assignments | Presenter All

Dr. Barbara Holder started the open discussion period. She began explaining that the FAA needs a proactive approach for COVID mitigation in terms of ongoing and upcoming research that is now on hold. An attendee noted that the IRB has an indefinite hold on using human subjects in studies. A second attendee explained that the IRB hold is coming from the DOT, not the FAA.

Discussion then moved to the drafting of F&Rs. Chris DeSenti agreed to draft language as an action for addressing the impacts of COVID. The subcommittee agreed that COVID brings about unique research opportunities that may not be possible any time soon. Kathy Abbott noted that there is currently a working group focusing on deskilling. Cheryl Quinn and Dave McKenney agreed to draft an F&R on the time-critical nature of this research. Phil Smith noted that there should be an F&R emphasizing the importance of data analytics in regional ATC facilities coordination.

End of Day 1

Wednesday, August 19th, 2020

FAA Budget Update | Presenter *Elizabeth Delarosby, FAA RED Budget Analyst, Manager*

Drs. Kaliardos and Holder opened Day 2 of the meeting, reviewing the agenda before introducing Elizabeth Delarosby to brief the budget update.

Elizabeth briefed the financial information in her slides, which can be accessed using the above link. A subcommittee member noted that certain work is currently suspended, asking if the budget office has considered this and come up with any contingency plans. Elizabeth explained that she did not have any information on that at that time. Her briefing can be accessed using the above link.

FAA Research Landscape Update with Q&A | Presenter *Steve Summer, FAA WJHTC, Research Portfolio Branch, Manager*

Steve Summer continued his briefing on the Research Landscape update. Continuing from yesterday, he explained that Human Factors issues are called out in the drivers and challenges. He noted again that Carla Hackworth, Kenneth Allendoerfer, and Tara Holmes have been tasked with going through the Landscape drivers and identifying Human Factors components. The group explained that the listing and associated framework is still being developed, but it will be circulated to the FAA for review and input. Dr. Holder asked how response to cases like the Boeing 737 MAX fit into the Landscape. Steve noted that this would fall into a number of drivers, and the list is dynamic in order to account for new developments. Dr. Holder noted that Human Factors and Human Safety must be represented. The subcommittee expressed concerns that with Human Factors being embedded in other drivers and not directly called out, it might be missed altogether.

Review of prior F&Rs | Presenter *All*

Mark Orr began the discussion, speaking to an F&R related to the strategic inputs to the research prioritization process (Aug. 2019, F&R #2). Mark admitted that there has not been a change in that direction. Dr. Kaliardos suggested the REDAC create a tool involving the emerging issues list that helps drives the portfolio and informs research decisions. Mark explained that this is an issue for all subcommittees. The subcommittee agreed that the current Aug. 2019, F&R #2 will be closed and rewritten. Dr. Holder took an action to draft language.

Lunch Break - 1

Review of prior F&Rs (cont.) | Presenter *All*

Dr. Kaliardos opened from the break informing the group of the new Vision 2035 document, which should be briefed at the next HF REDAC meeting. Mark Orr then briefed on the FY23 R&D Portfolio process. Mark stepped through the slides, explaining that in FY23 they are moving to a 5-year plan for each BLI. Subcommittee members noted their concerns that this new process may still stove-pipe Human Factors, not

accounting for enterprise impacts. Dr. Kaliardos and Mark agreed to work offline to draft the FAA response. Dr. Holder agreed to sharpen the language on this F&R to a more actionable finding. Mark's briefing can be accessed using the above link.

Lunch Break - 2

Review of Updates to HF Subcommittee Emerging Issues List / F&R Finalizing and Wrap-up | Presenter All

Dr. Holder briefed an update on the Human Factors emerging issues list, stepping through each research area and the associated issues. An attendee noted that the list seems Flight Deck focused, and Dr. Holder agreed that this might be the case and offered up an opportunity for input.

Dr. Holder next moved to a review of the suggested F&Rs. The subcommittee had agreed to draft three F&Rs:

1. Data Analytics in Regional ATC Operations
2. COVID risk assessment for delays in research
3. Assessing potential opportunities for COVID related research

There will also be an Action Item for an update on the Research Landscape. The dates for the next two meetings were discussed and agreed upon (March 23-24, 2021 & August 17-18 2021). There will be a future discussion about the possibility of a joint meeting with another REDAC subcommittee. The date for the Full REDAC meeting is scheduled for October 8, 2020 and will be virtual. Drs. Kaliardos and Holder thanked the subcommittee and the attendees and adjourned the meeting.

End of Day 2

Agenda:**DAY 1 – Tuesday, August 18, 2020**

Time	Topic	Presenter
11:00 – 11:30 ET	Welcome / Introductions	Dr. Barbara Holder , HF Subcommittee Chair; Dr. Bill Kaliardos , Designated Federal Official (DFO)
	Update from Full Committee Meeting	Dr. Barbara Holder , HF Subcommittee Chair
	REDAC Mission & Opening Remarks	Shelley Yak , FAA Director of William J. Hughes Technical Center, REDAC Co-Chair
	FAA Research Landscape Update (Summary)	Steve Summer , FAA William J. Hughes Technical Center, Research Portfolio Branch, Manager
11:30 – 12:30 ET	Flight Deck HF Research, NextGen	Dr. Victor Quach , FAA Flight Deck NextGen HF Portfolio Manager
	Flight Deck HF Research, Core	Dr. Chuck Perala , FAA Flight Deck Core HF Portfolio Manager
	ATC HF Research, NextGen	Karl Kaufmann , FAA ATC Enterprise HF Portfolio Manager
	ATC HF Research, Core	Dan Herschler , FAA ATC Core HF Portfolio Manager
12:30 – 13:30 ET	Lunch Break – 1	
13:30 – 14:00 ET	FAA HF Research Briefings (cont.)	FAA , HF Division (cont.)
14:00 – 15:00 ET	Today's automated production vehicles: are we on target or missing the mark?	Dr. Bryan Reimer , Research Scientist, MIT
15:00 – 16:00 ET	Lunch Break – 2	
16:00 – 17:00 ET	COVID-19 Updates / F&R Brainstorming / HW Assignments	All
17:00 ET	Day 1 Adjourned	

DAY 2 – Wednesday, August 19, 2020

Time	Topic	Presenter
11:00 – 11:15 ET	Review of HW Assignments	All

Time	Topic	Presenter
11:15 – 11:30 ET	FAA Budget Update	Elizabeth Delarosby , FAA RED Budget Analyst, Manager
11:30 – 11:45 ET	FAA Research Landscape Update with Q&A	Steve Summer , FAA William J. Hughes Technical Center, Research Portfolio Branch, Manager
11:45 – 12:30 ET	Review of prior F&Rs: 1) Emerging HF Issues (August 2019 F&R #2) 2) AVS Prioritization Process (March 2020 F&R #3)	All
12:30 – 13:30 ET	Lunch Break – 1	
13:30 – 15:00 ET	Review of Updates to HF Subcommittee Emerging Issues List	All
15:00 – 16:00 ET	Lunch Break – 2	
16:00 – 17:00 ET	F&R Finalizing and Wrap-up	All
17:00 ET	Meeting Adjourned	

*F&R = Finding and Recommendation

Subcommittee on Human Factors
Summer-Fall 2020 - August 18 - 19, 2020
Attendees Lists

DAY 1

Number	Name
1	CA Roundtree-Coleman
2	Bill Kaliardos
3	Mark Orr
4	Barbara Holder
5	Evan Harvey
6	Dan Brock
7	Al Secen
8	Alexandra Fortune
9	Andrea Sparko
10	Angel Millan
11	Brian Townsend
12	Ben Willems
13	Carl Berntsen
14	Cheryl Quinn
15	Chris Reed
16	Chuck Peralá
17	Colleen Donovan
18	Kevin Comstock
19	Dan Herschler
20	David McKenney
21	Divya Chandra
22	Doneliya Deneva Raza
23	Doug Rodzon
24	Drew Kendra
25	Eddie Austrian
26	Ian Johnson
27	Janeen Kochan
28	Jeff Dressel
29	John Holbrook
30	Jonathan Archer
31	Karl Kauffman
32	Kathy Abbott
33	Kenneth Allendorfer
34	Leah Rowe
35	Leja Collier
36	Maggie Ma
37	Phil Bassett

38	Rachel Seely
39	Rany Azzi
40	Rich Golden
41	Shelly Yak
42	Sherry Chappell
43	Smith.131
44	Steve Summer
45	Steve Lang
46	Tara Holmes
47	Terry King
48	Tracy Lennertz
49	Victor Quach
50	Irena Farlik
51	Marlo E. Allen
52	Brian Remer
53	Chris DeSenti
54	Ashley Awwad
55	Michelle Yeh
56	J Archer iphone
57	1 336 253 4022

DAY 2

Number

Name

1	CA Roundtree-Coleman
2	Evan Harvey
3	Mark Orr
4	Barbara Holder
5	Sabreena Azam
6	Smith.131
7	Terry King
8	Al Secen
9	Angel Millan
10	Ashley Awwad
11	Barbara Holder
12	Caprice Brown
13	Carl Berntsen
14	Cheryl Quinn
15	Chris DeSenti
16	Chris Reed
17	Chuck Perala
18	Colleen Donovan

19	Dan Brock
20	Dan Herschler
21	David McKenney
22	Divya Chandra
23	Doneliya Deneva Raza
24	Eddie Austrian
25	Elizabeth Delarosby
26	Ian Johnson
27	Jeff Dressel
28	Jon Holbrook
29	Jonathan Archer
30	Karl Kauffman
31	Kenneth Allendorfer
32	Kevin Comstock
33	Kevin Williams
34	Leah Rowe
35	Leja Collier
36	Maggie Ma
37	Mark Hale
38	Mark Orr
39	Marlo E. Allen
40	Michelle Yeh
41	Phil Bassett
42	Rany Azzi
43	Rich Golden
44	Sabreena Azam
45	Sherry Chappell
46	Steve Lang
47	Tara Holmes
48	Terry King
49	Tracy Lennertz
50	Victor Quach