

TASK SPTT05. ATC Scenario Training Technology (ASTT)

PROJECT AT-A-GLANCE

- UNIVERSITY: Embry-Riddle Aeronautical University
- PRINCIPAL INVESTIGATOR(S): Dr. Shafagh Jafer
- STUDENT(S): B. Chhaya, K. Petal
- INDUSTRY PARTNER(S): RTSync

RELEVANCE TO TECHNICAL TRAINING AND HUMAN PERFORMANCE

- ASTT is a web-based ATC Simulation tool mimicking ERAM, that provides on-site & home-based training availability to ATC trainees, increasing their success rate.

STATEMENT OF WORK

- Implementation of a web-based ATC scenario training tool
- 24/7 availability to trainees and instructors
- Enroute scenario generation and practice environment
- Student performance tracking and scenario run history available for instructors for performance evaluation
- Human factors evaluation of tool usage
- Extension/configuration of ASTT to include tower and TRACON, as well as other capabilities (using at various facilities, CPDLC communication, automation in scenario generation)

STATUS

- Project will be closing on May 1, 2019.

April 16-17, 2019
The Ohio State University

The image displays two screenshots of the ASTT web-based ATC simulation interface. The left screenshot shows the Radar view, which includes a map of the airspace with various flight tracks and toolbars. The right screenshot shows the EDST (Enroute Data Structure Table) view, which displays a table of flight data.

ACL	TR	DEF	GRP	PLANS	WIND	WX	REPORT	SIG	NOT	GI	ALIM	MCA	RA	WA	STATUS	OUTAGE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AddFind	Hold	Show	Show All	Sort...	Tools...	Posting Mode	Template	Clean Up	Facilities: M							
✓	R	Y	A	Flight ID	P2	Type	ALT	Code	Hdg/Spd	Route						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 291	N226B	C560/G	340	3301	/	GWO_SQS_AEX_KIAH						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 651	N283ER (65)	C425/F	130	3304	/	KBNA_MCB_KHOU						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 502	AAL102 (JJJ)	MD88/A	100T320	3401	/	JAN_JAN_KTUL						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 008	N13MS (JJJ)	PAY4/R	100	3303	/	HKS_MEI_KTPA						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 145	AAL973 (H40)	B736/R	230	3201	/	KHOU_GLH_HLI180015_KBNA						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 899	AAL977 (H40)	MD90/A	230	3203	/	KHOU_GLH_HLI180015_KBNA						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 778	AAL972 (H40)	B736/A	230	3202	/	KHOU_GLH_HLI180015_KBNA						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 849	AAL205 (F30)	MD90/A	110T110	3406	/	KDFW_EIC_MLU_SIGNS_JAN_KJAN						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 601	N32AP (15)	C525/A	130	3202	/	MEM_JAN270030_KGPT						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 042	N45KO (67)	C560/G	210	3305	/	KFSM_JAN_GPT						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 400	AAL204 (12)	MD88/A	110T110	3405	/	KMEM_SQS_BERRA_JAN_KJAN						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 195	AAL227 (12)	B735/A	110T110	3407	/	KMEM_SQS_AEX_KIAH						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 287	AAL203 (12)	MD82/A	110T110	3404	/	KMEM_SQS_BERRA_JAN_KJAN						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 571	N211AB (H40)	L155/G	230	3207	/	KHOU_UJM_KMEM						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A 255	AAL103 (JJJ)	MD88/A	100T340	3402	/	JAN_JAN_KLIT						

FUTURE WORK

- ASTT- Phase I: deployment of ASTT at the Academy.
- ASTT- Phase II: will include addition of scenario screen capturing and play back, as well as automation for scenario generation by instructor.
- ASTT-CPDLC: will include controller pilot datalink communication - (CPDLC) capabilities.



Publications, Presentations & Awards

- Chhaya, B., Jafer, S., Coyne, W. B., Thigpen, N. C., and Durak, U
“ **Enhancing Scenario-Centric Air Traffic Control Training**”, American Institute of Aeronautics and Astronautics, AIAA Modeling and Simulation Technologies Conference, AIAA SciTech Forum, (AIAA 2018-1399), Jan 2018.
- Shannon, C., Vardha, A., Moallemi, M., Jafer, S., Thigpen, N. C.
“**Software Challenges of a Web-based Air Traffic Control Training Tool**”. Accepted at IEEE/DASC 2018.
- Three more publications accepted at AIAA SciTech2019. In press.