

SUBJECT INDEX

- accident investigation 121, 123, 130
- accidents 105–106, 111, 115
- adaptable automation 252
- adaptive automation 41–44, 54–55
- aerial vehicle 165
- Air Operations Cell (AOC) 311–313, 315–318, 320–326
- air traffic control (ATC) 73, 77, 79–82, 85–86
- Altair 110
- artificial intelligence 202, 205
- attention 213–214
- automation 7, 17, 91–92, 100, 102, 106, 111, 113–115, 209–210, 212–213, 216–220, 252–254, 258, 262–264
- automation agent 270, 281
- automation reliability 209
- autonomous operation 193–194, 205
- autonomous systems 53
- autonomy 225–226, 384–385

- camera angle 172, 174
- camera-viewpoint 376, 378–380
- Cognitive Engineering Research Institute (CERI) 3–4, 9, 12
- Cognitive Engineering Research on Team Tasks Laboratory (CERTT) 285–295
- cognitive issues 4–5, 8
- cognitive load 329–332, 335–336, 338, 340
- cognitive task analysis (CTA) 312, 315, 318, 320–321, 326, 363
- collaboration 299, 301, 303–307, 329–330

- command and control 49, 181, 184, 189, 285, 289
- communication 287–288, 291, 293, 295–296
- concept mapping 318
- control handoffs 110–111
- control method (CM) 136–138, 140, 144–145
- controls 108–109
- coordination 286–288, 290–296, 299, 301–307
- crew size 59, 65–67
- critical incident 315, 317–318

- data-driven perspective 42–43
- delay 169, 171
- delegation interface 251–255, 261–264
- Deployable UAV Operations Cell (DUOC) 311–313, 315–318, 320–326
- display configuration 383–384
- displays 8, 10–11, 239–240

- emerging technology 4, 8–9
- ergonomics 23, 32
- error classification 97
- external piloting 106
- external UAV pilot 75–76, 78

- failures 92, 94–102
- feedback 168–171, 176
- field-of-view (FOV) 378–380
- Fire Scout 112
- flight control 105–106, 108, 111, 114–115

- full scale environments 353
 function allocation 54, 57
- Generic Error Modeling System (GEMS) 99**
 Global Hawk 23, 25, 27, 30, 111–112
 ground control station (GCS) 22–25, 32
- heads-up-display (HUD) 25
 Helios 110, 113
 helmet mounted display 151
 human error 91–94, 96–97, 100–101, 118–119, 121, 123–129
 human factors 3–4, 6–9, 11–13, 17–19, 21–23, 25, 27, 30–32, 49–50, 54, 56, 117–118, 121, 123, 126–129
Human Factors Analysis and Classification System (HFACS) 121, 123, 129
 human-machine interaction 268
 human-robot 261, 264
 human-robot interaction (HRI) 348, 351, 355–357, 361–363, 367, 371
 human-robot team 330–332, 335–336, 338
 human-system interactions 226–227
 Hunter UAV 61–62, 69, 209–210, 216
 hybrid team 330, 338–340
- imagery 167, 170, 172
 intelligent adaptive interface (IAI) 268–271, 273–274, 276–277, 279–281
 intelligent control system 227
 interfaces 7–9, 13, 15, 17–18, 176, 238–244, 246
 internal UAV pilot 75–76, 78
 interviews 315, 318
- Job Assessment Software System (JASS) 62–65, 69–70**
 large-scale teams 243
 low cost autonomous attack system (LOCAAS) 237–239, 243
- manual control 166, 168, 170–173, 176
 mapping 376–378
 metacognition 337, 339–340
 micro aerial vehicle (MAV) 165
 mishaps 94, 105, 109, 111, 115
 mismatch illusions 141
 mixed-initiative control 228
 modeling 212–213, 215, 220
 multi UAV control 251, 258
Multi Unified Simulation Environment (MUSE) 78
 multi-sensory interface 149, 160–161
 multi-vehicle control systems 225
 multimedia 329–330, 332, 340
 multiple resources 212, 220
 multiple robots 385
 multiple UAV 184, 186, 189–190
 multiple UAV control 213–214, 219, 231, 268, 270, 273
- National Airspace System (NAS) 71–73, 77, 79–81, 86–87**
 network centric 179, 183, 186
 network model 268, 270–271, 276–277
- operator 72–79, 81, 86–87
 operator certification 77
 operator interface 267–269
 operator selection 27, 29, 56, 71, 74, 79
 operator training 27
- partial mental models 226, 228
 performance influencing factors (PIF) 93, 99
 performance modeling 267, 269–270
 Playbook 258, 260

- Predator 22–23, 25, 27, 110–111, 299, 301, 311, 315, 317
proximity 41–44
- relational knowledge framework 224, 226
- remotely operated combat vehicles (ROCVs) 39
- research testbed 13
- RoboFlag 257, 261–262
- robot navigation 375–379
- robotics 357, 359
- robots 375–376, 381, 384–385
- ROV 13, 17–19, 37–41, 44, 149–153, 155–156, 158, 160–161, 180, 223–228, 231, 235, 251–252, 254, 261, 264, 287, 299–301, 303–307, 329, 347–348, 351, 353–356, 362, 375–385
- safety 4, 11, 18, 91
- scale environments 352–353, 355
- SD countermeasures 144
- SD taxonomy 138
- search munitions 237
- Shadow 109–110, 209
- shared mental models 303–307
- simulation 59–62, 66, 69–70, 166–167, 169, 176–177, 348, 350–353, 355–357
- situation awareness 50, 52, 55, 361–363
- skills rules knowledge (SRK) 92, 99–100
- soldier-in-the-loop simulations 61
- space 38, 41–44
- spatial aural display 150, 159
- spatial dialog 193, 198–202, 204–205
- spatial disorientation (SD) 133–144
- speech recognition 158
- supervisory control 49, 51–53, 55, 253, 263–264
- suppression of enemy air defenses (SEAD) 49–52, 55
- synthetic vision overlay 153
- tactile display 155, 158
- taskwork 288, 290–291
- team cognition 286–287, 294, 296
- team training 301, 306–307
- teams 286, 288–295, 329–332, 334, 336–340
- teamwork 288, 290–291, 294
- tele-operation 166, 375–376, 381, 384
- time 37, 40–44
- training 92–96, 98–102, 165, 168, 170, 173, 176–177, 350, 352
- training requirements 77
- uninhabited combat air vehicles (UCAV) 49–56
- unmanned aerial vehicle (UAV) 3, 21, 51–52, 59, 61–65, 67–69, 71, 91, 112, 117, 129, 133, 179, 193, 209–217, 219–220, 223, 237, 267–271, 273–274, 276, 279–281, 285, 312–313, 315–319, 321–327
- UAV accidents 93, 100
- UAV command and control 312
- UAV operations 93, 100
- UAV synthetic task environment (STE) 286–288, 290, 293–295
- unmanned aircraft systems (UAS) 180
- unmanned combat armed rotorcraft (UCAR) 195, 198
- unmanned ground vehicles (UGV) 361, 371, 381
- urban search and rescue (USAR) 362–368, 370, 372, 380–382
- usability 168, 174–175
- user interface design 224
- vehicle certification 73
- video displays 179, 184, 186–187, 189
- video imagery 179, 188
- videogames 291–293, 295
- vigilance 65–66
- visual displays 151, 160

- visual illusions 138–141, 145
- visual reference (VR) 135–138, 141, 145
- wide area search munition (WASM)
 - 237–245, 248
- workload 50, 52, 55–57, 61–62, 65, 67,
69–70, 174–175, 194–195, 197–198,
206, 209–210, 212–213, 215–217,
219–220, 329–330, 337–340