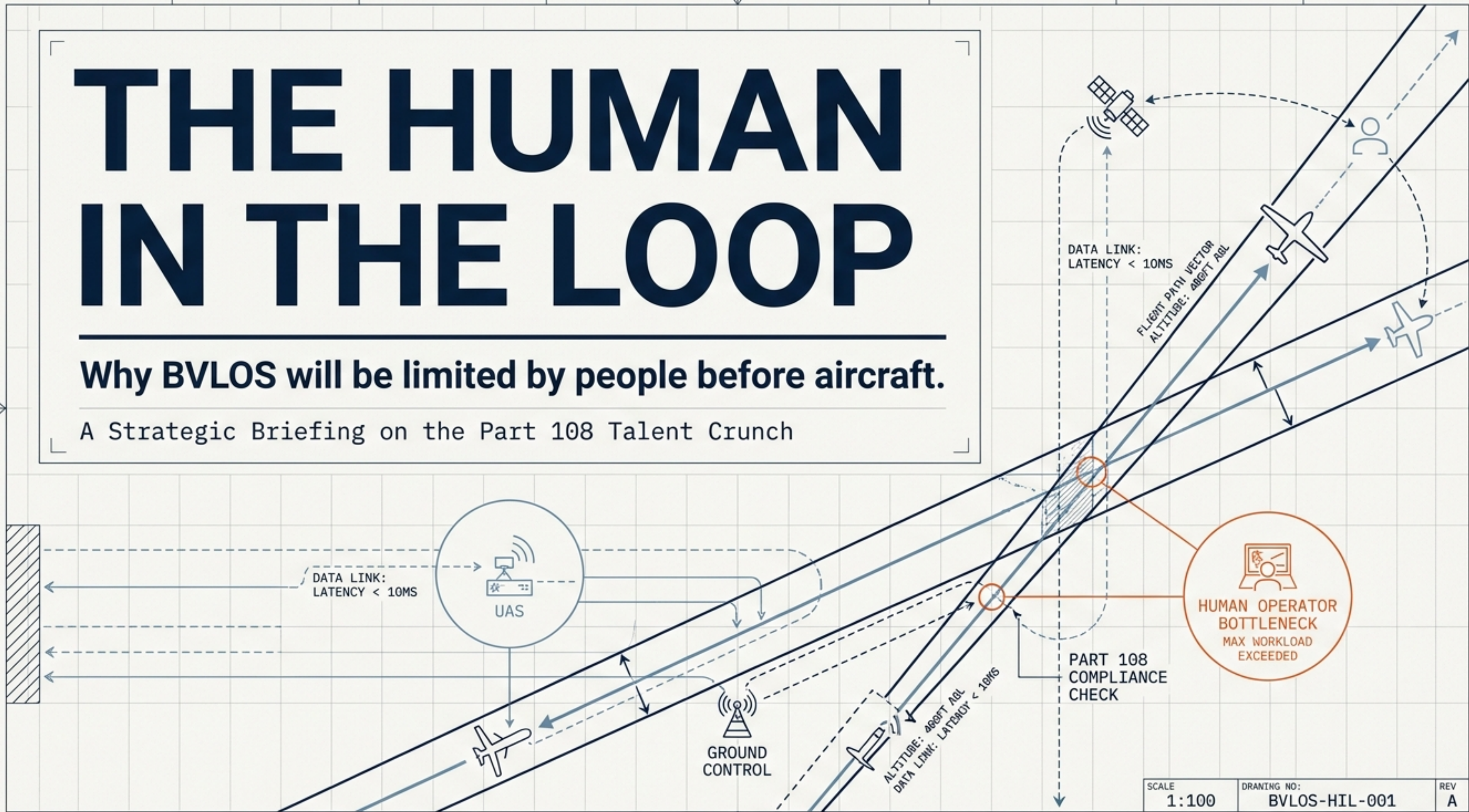


THE HUMAN IN THE LOOP

Why BVLOS will be limited by people before aircraft.

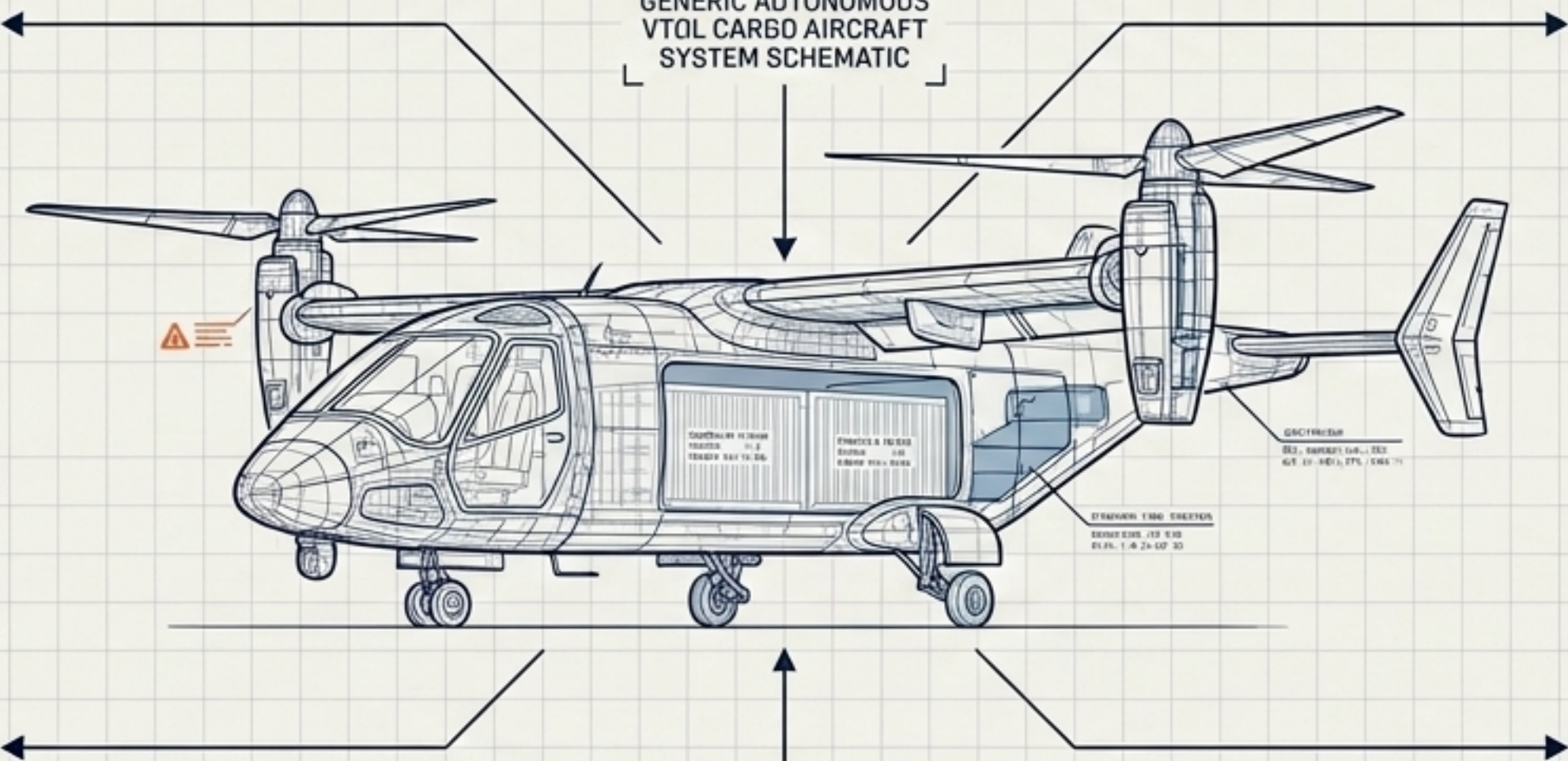
A Strategic Briefing on the Part 108 Talent Crunch



AUTONOMY DOES NOT MEAN PILOTLESS

Cargo aircraft like this autonomous VTOL may not carry a pilot onboard, but they do not operate without people.

GENERIC AUTONOMOUS VTOL CARGO AIRCRAFT SYSTEM SCHEMATIC



DISPATCH

WEATHER DATA

DATE	13.20.78
TIME	12:10:00
DEST/DIR:	13.04.13.70
WIND	90:30 °C
TEMP - CABIN	24.20 °C
TEMP - WING	16.77 °C
TEMP - FUEL	2.10 °C

OPERATIONAL PLANNING & ROUTING // REAL-TIME MONITORING // MISSION OVERSIGHT

MAINTENANCE

- CHECK: COOLANT
- CHECK: OIL LEVELS
- CHECK: ENGINE TEMPERATURE
- CHECK: FUEL SYSTEM PRESSURE
- CHECK: ELECTRICAL SYSTEMS
- CHECK: AIRCRAFT WEIGHT
- CHECK: COCKPIT

SYSTEMS DIAGNOSTICS // PREVENTIVE SERVICING // REPAIR & OVERHAUL

CYBERSECURITY

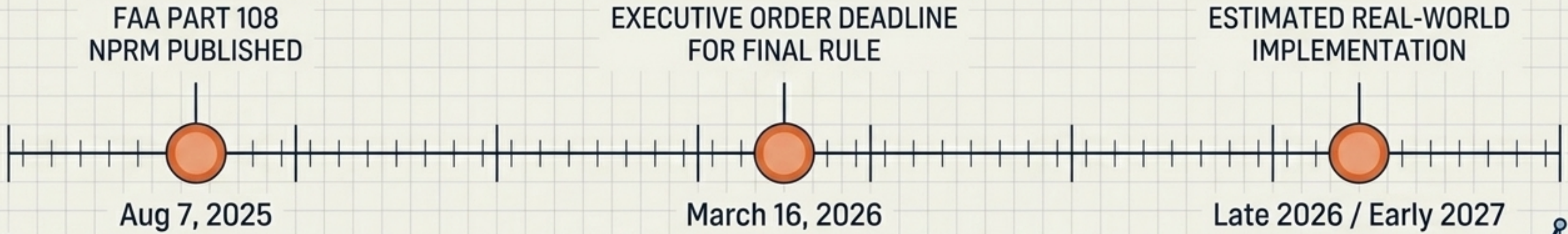
DATA PROTECTION // THREAT MITIGATION // NETWORK INTEGRITY // SECURE COMMS

FLIGHT COORDINATION

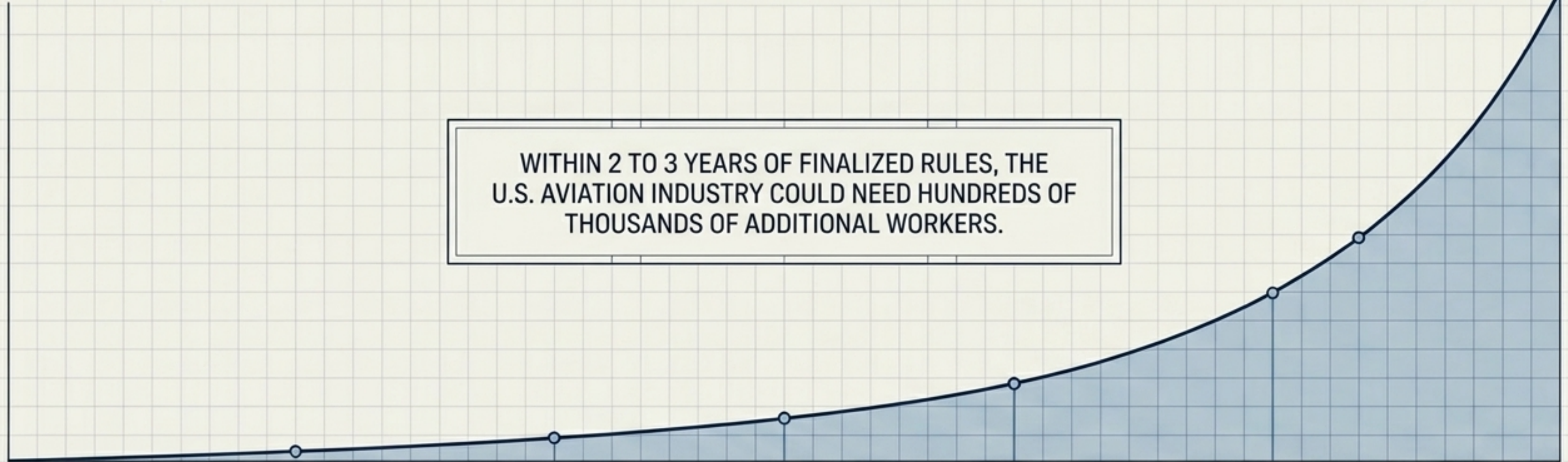
AIRSPACE MANAGEMENT // REGULATORY COMPLIANCE // TRAFFIC DECONFLICTION // BVLOS APPROVALS

The transition to autonomous Beyond Visual Line of Sight (BVLOS) flight is not a smaller workforce problem. It is a different workforce problem. It shifts the human role from active stick-and-rudder control to systems oversight and operational governance.

THE PART 108 COUNTDOWN



WITHIN 2 TO 3 YEARS OF FINALIZED RULES, THE U.S. AVIATION INDUSTRY COULD NEED HUNDREDS OF THOUSANDS OF ADDITIONAL WORKERS.



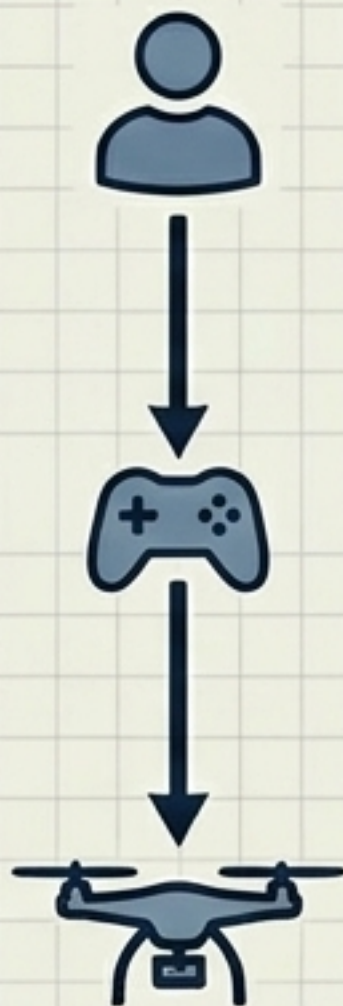
THE PARADIGM SHIFT: DRONE OPERATOR VS. AVIATION DEPARTMENT

	PART 107	PART 108
HUMAN-TO-AIRCRAFT RATIO	1:1	1:100+
PRIMARY HUMAN ROLE	STICK-AND-RUDDER	SYSTEMS OVERSIGHT & ATC
REGULATORY BURDEN	INDIVIDUAL CERTIFICATION	ORGANIZATIONAL SMS & TRAINING
FAILURE MANAGEMENT	VISUAL AVOIDANCE	DISTRIBUTED CONTINGENCY MANAGEMENT

PART 107 CREATED A LARGE POPULATION OF REMOTE PILOTS.
THAT IS NECESSARY, BUT INSUFFICIENT FOR ROUTINE BVLOS AT SCALE.

THE OPERATIONAL REALITY OF AUTOMATION

MANUAL CONTROL (LINEAR)



SYSTEMS SUPERVISION (DISTRIBUTED)



"Instead of one aircraft to one pilot, you have one pilot to tens, if not hundreds, of aircraft at once, acting more like an air traffic controller..."

THE WRONG METRIC

**THE DRONE INDUSTRY DOESN'T
HAVE A PILOT SHORTAGE.
IT HAS A TALENT BOTTLENECK.**

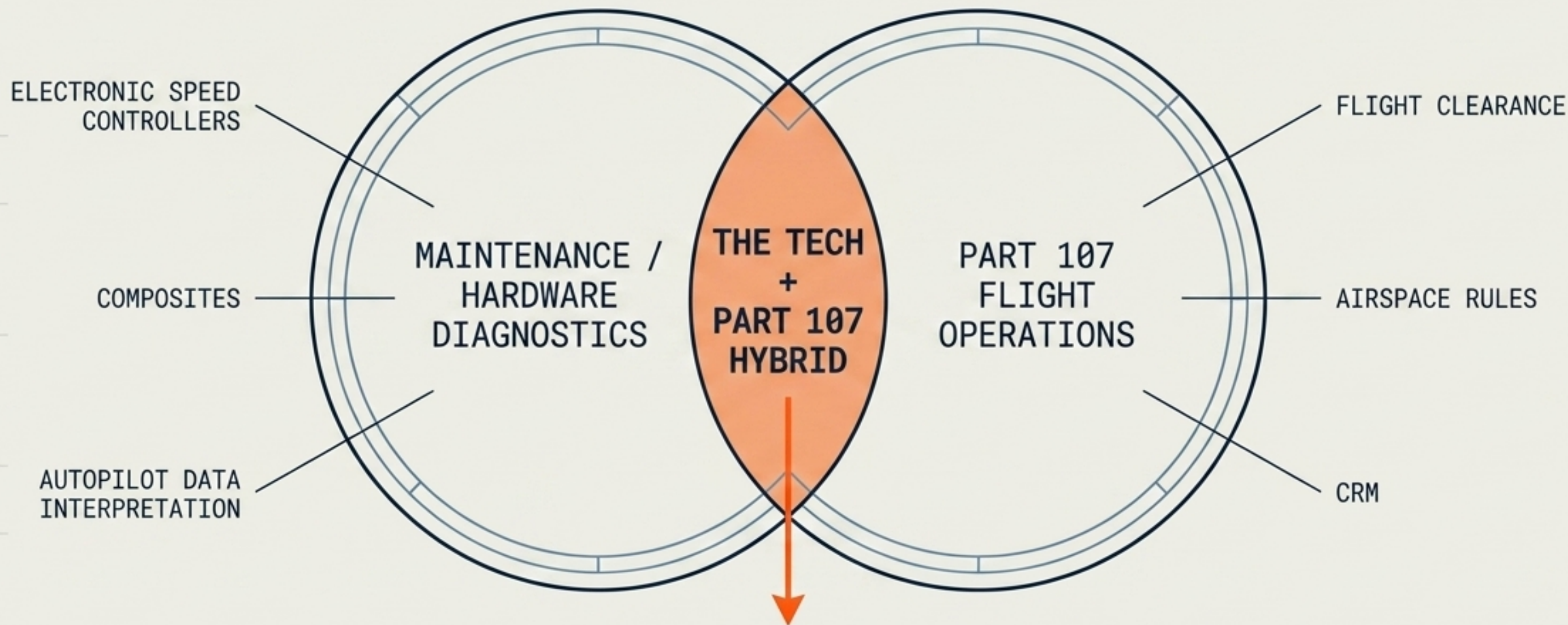
1.2
Qualified Technicians
(Electrical, structural, diagnostics)
1083

1.2
Fleet Operations
Supervisors
9HET4

1.2
Regulatory &
Compliance Experts
1850

- Part 107 holders now outnumber private and airline transport pilots combined.
Remote pilots are easy to find. Systems leaders are not.

THE RISE OF THE HYBRID OPERATOR

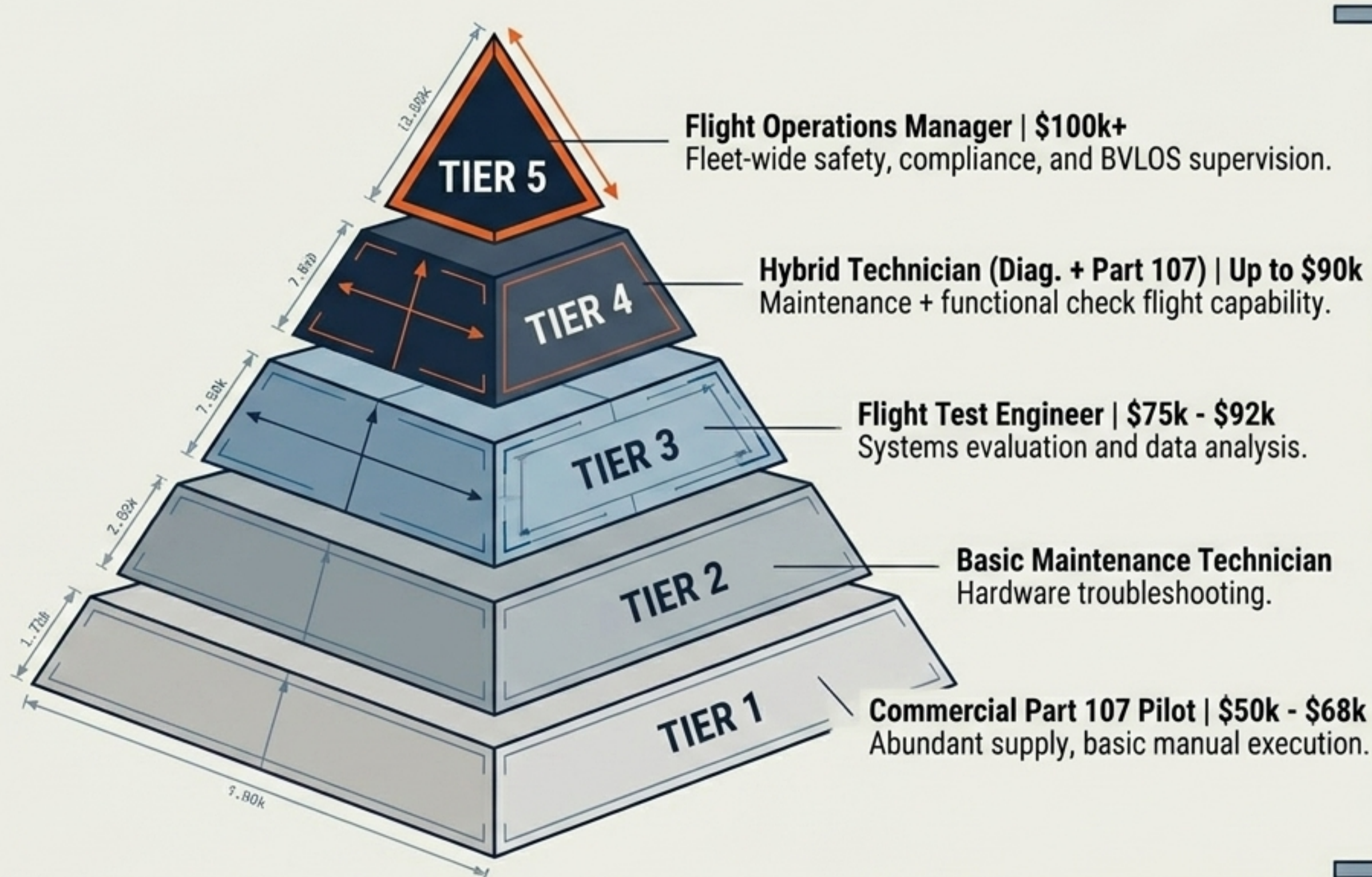


Why are they sought after? They can conduct functional check flights after maintenance without pulling a dedicated pilot from an active operating team.

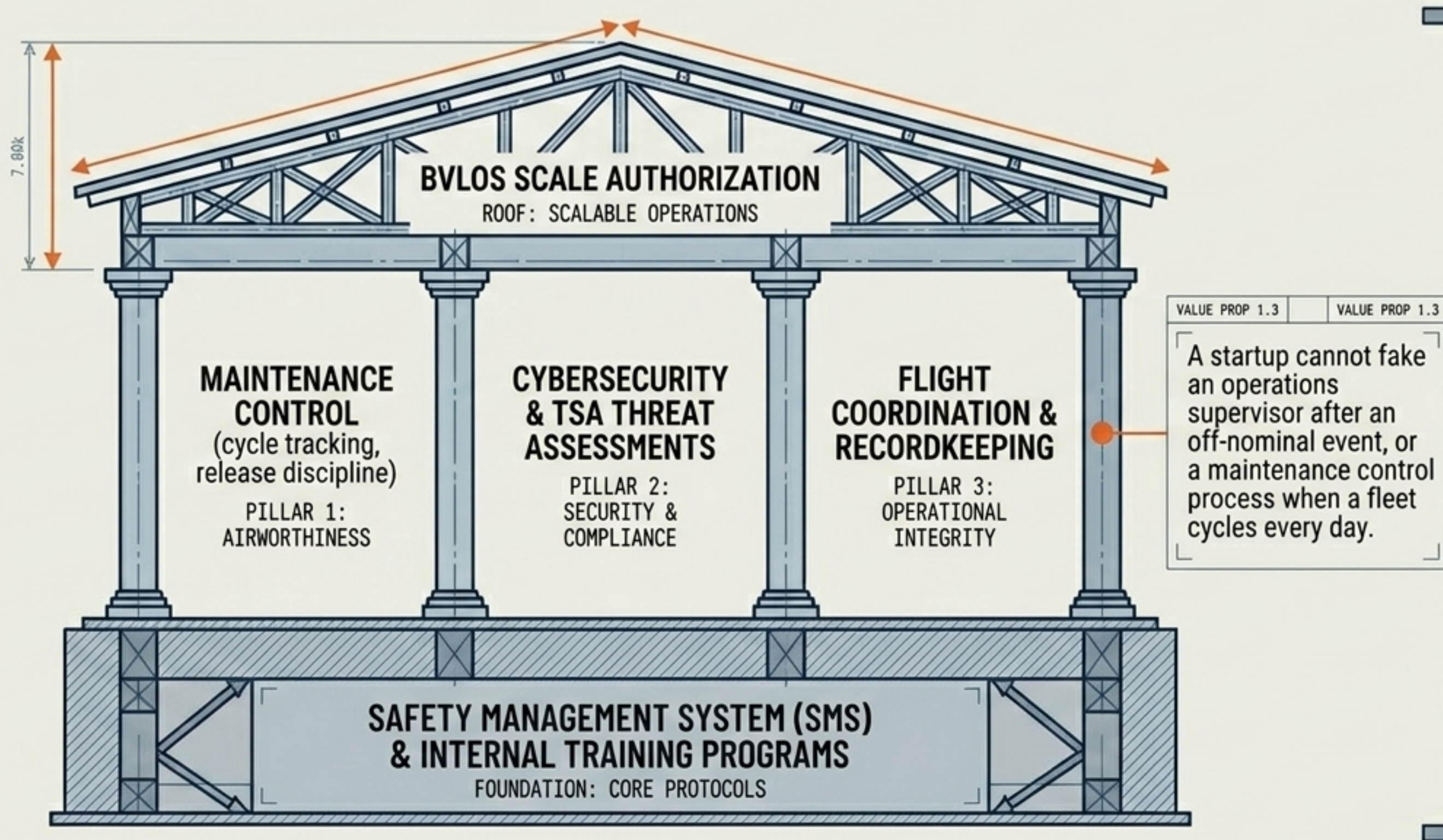
VALUE PROP 1.3

TECHNICAL OPS

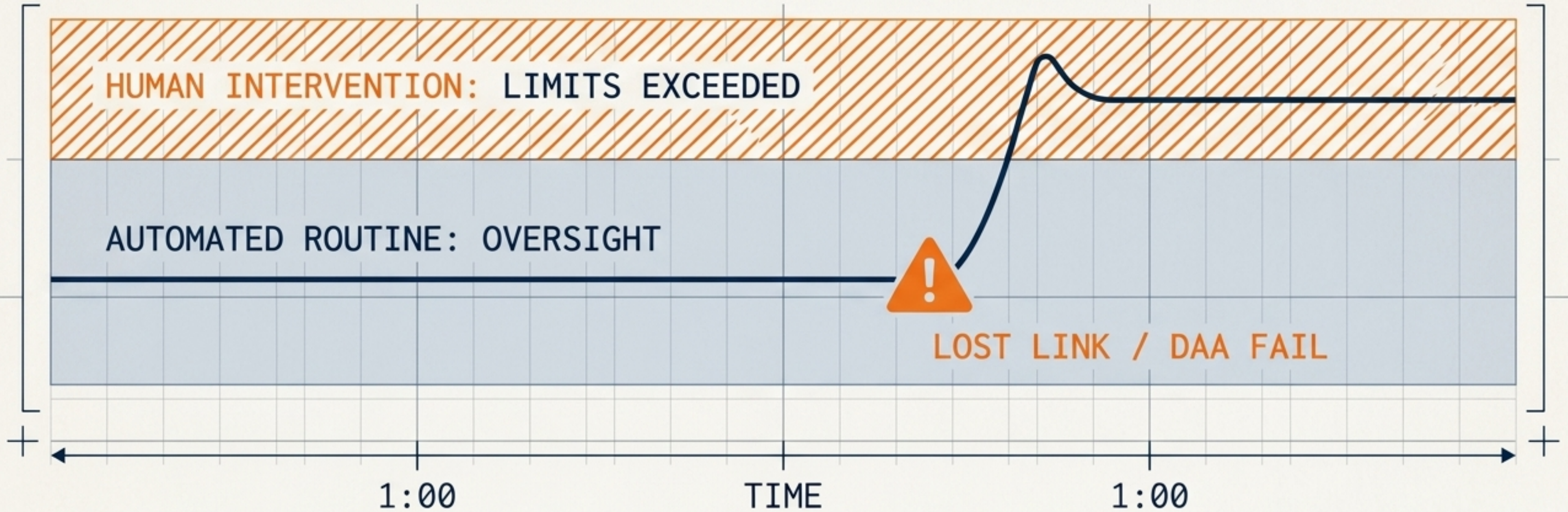
THE COST OF BVLOS COMPETENCE



YOU ARE BUILDING AN AVIATION DEPARTMENT



THE SAFETY BACKSTOP



The Flight Coordinator's value is not measured by stick skills during routine flight, but by their ability to decode system faults and make conservative calls when the automation drifts to the edge of the envelope.

THE TALENT SQUEEZE



Commercial drone companies are rarely the highest bidder in the room. You must offer a serious mission to attract serious operators.

THE PIPELINE DISCONNECT

PART 107 REALITY

- Individual Responsibility
- **Self-directed / Weekend course**
- Cost: **\$150 - \$275**
(Test fees)

```
DATA  
Bt: 6.93-989  
R7: 58, 16, 555  
Dn41s: 0
```

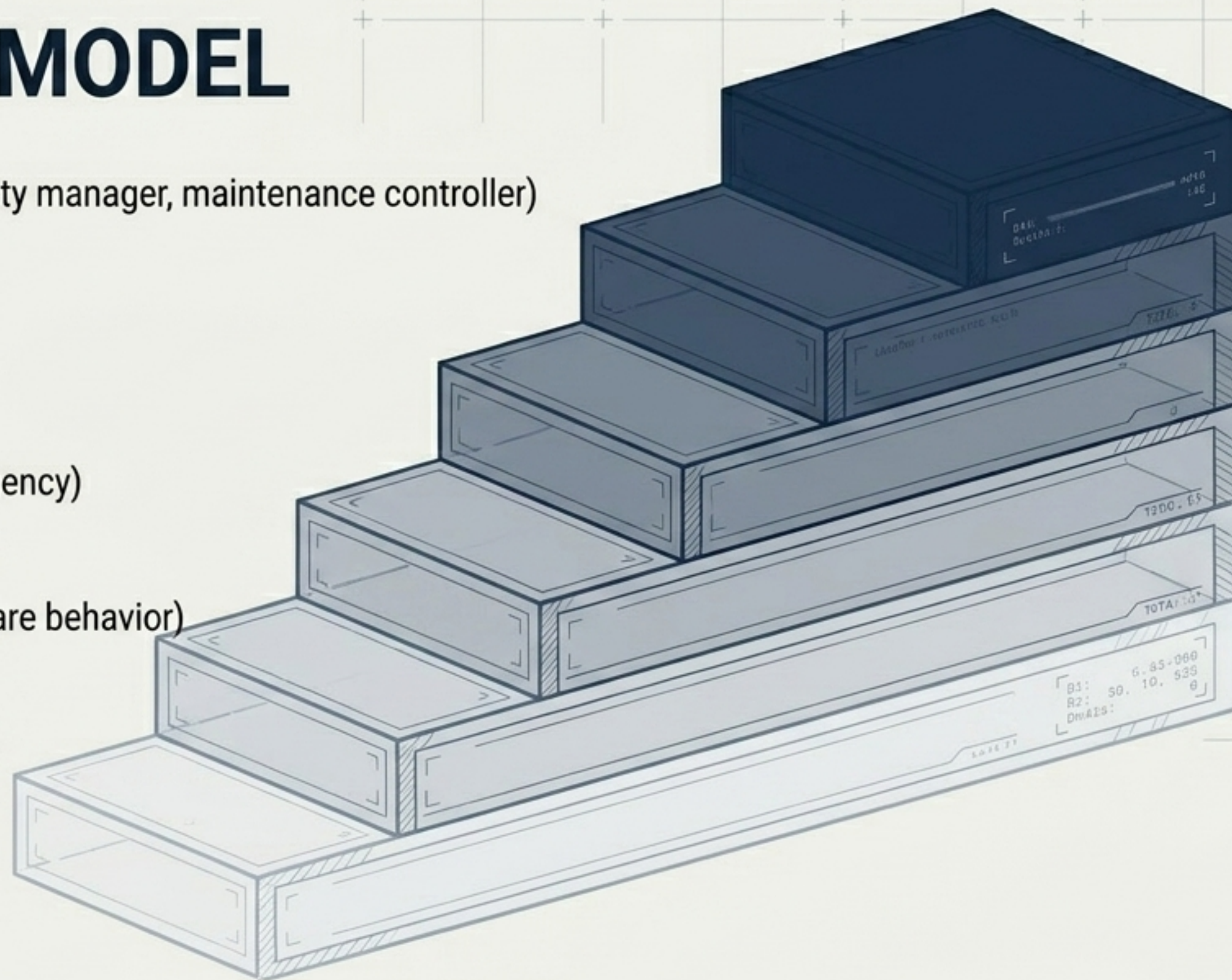
PART 108 REQUIREMENT

- Organizational Responsibility (Operator must train)
-
- TOTT: 2.205
- Systems, Multi-UAS sequencing, HMI training
- 
-
- TOTA: 2.182
- Cost: **Up to \$24,000**
(80-week Associate's degree model)
- 

We cannot rely on weekend courses to generate **aviation-grade** operational leaders.

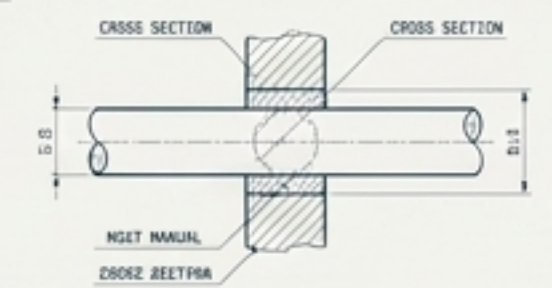
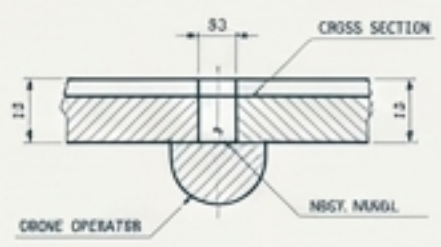
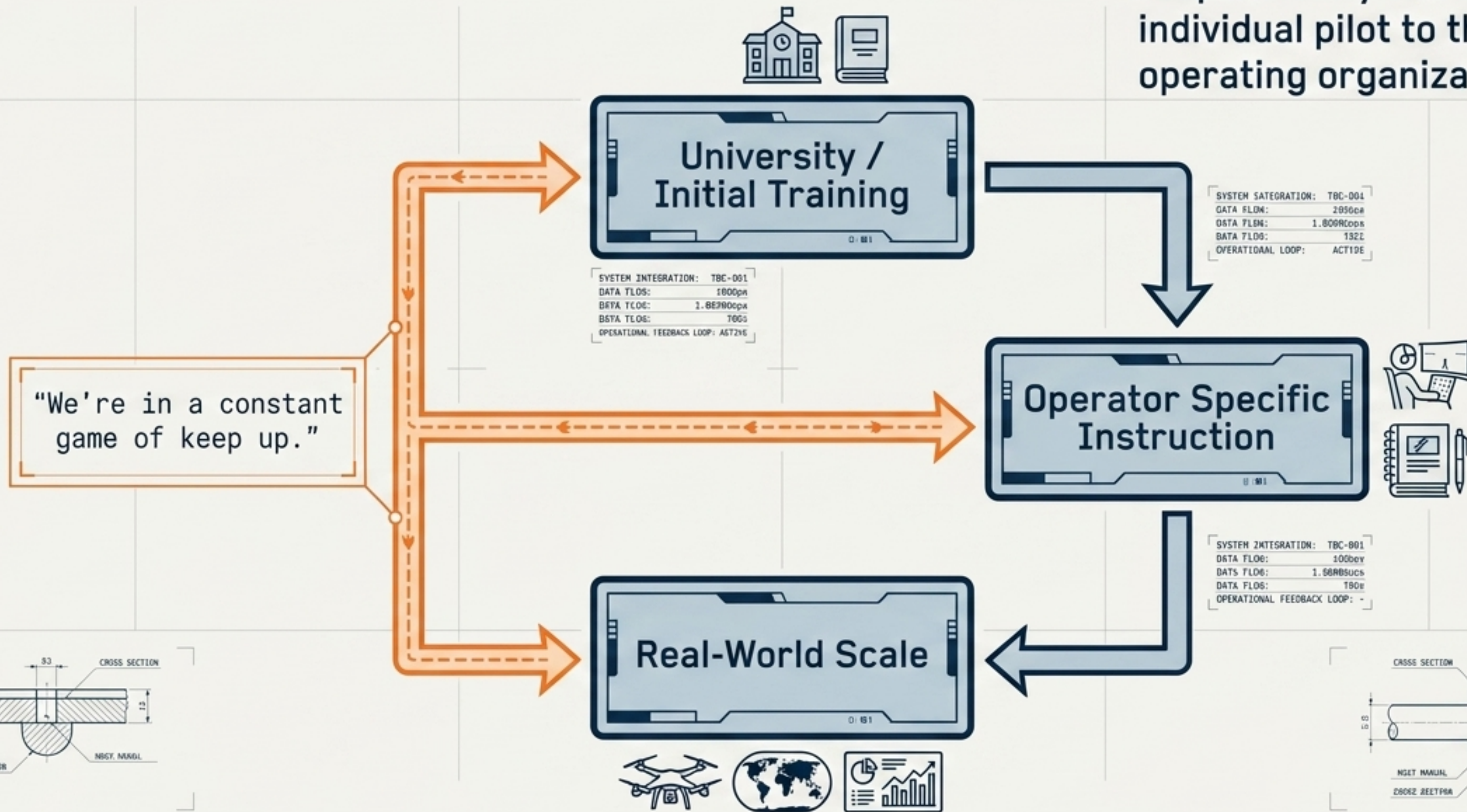
REBUILDING AN APPRENTICESHIP MODEL

- 6 Leadership & Accountability (Safety manager, maintenance controller)
- 5 BVLOS Supervision (DAA assumptions, multi-aircraft tempo)
- 4 Operational Control (Risk assessment, mission release, contingency)
- 3 Systems Qualification (C2 architecture, emergency modes, software behavior)
- 2 Domain Specialization (Inspection, defense, delivery)
- 1 Foundational Competence (Airspace, weather, CRM)



TRAINING AS A BUSINESS MANDATE

Under Part 108, training responsibility shifts from the individual pilot to the certified operating organization.



THE OPERATOR BOTTOM LINE

SYSTEM INTEGRATION: TBC-A01
DATA FLOW: 2000w
DATA FLOW: 1.000000ps
DATA FLOW: 1001
OPERATIONAL LOOP: ACT12E

The operators who move fastest under Part 108 will not be those with the slickest aircraft.

They will be those who can prove to regulators, insurers, and customers that they have qualified people in the loop managing the system's edge.

SYSTEM INTEGRATION: TBC-061
DATA FLOW: 2000w
DATA FLOW: 2.000000ps
DATA FLOW: 5M1
OPERATIONAL LOOP: ACT14E

SYSTEM INTEGRATION: TBC-601
DATA FLOW: 2000w
DATA FLOW: 1.000000ps
DATA FLOW: 7531
OPERATIONAL LOOP: ACT712

Start building the bench before the rule is final.

Write job descriptions around operational problems, not buzzwords.

SYSTEM INTEGRATION: TBC-061
DATA FLOW: 2000w
DATA FLOW: 1.000000ps
DATA FLOW: 1001
OPERATIONAL LOOP: ACT14E



Uncrewed aviation does not get to skip the lesson because the cockpit moved to the ground.

