INTERNATIONAL CIVIL AVIATION ORGANIZATION



ICAO · INNOVATION

AI Governance in Aviation

AI Survey 2026 - analysis by section, with global and regional breakdowns

Who responded - participation & composition by region

103
Total responses

85
Unique States & territories

41%
Member-State participation

7
ICAO regions represented

103 responses = 93 Government + 7 International Organizations + 3 'Other'. 91 unique entities (12 submitted more than once); 6 are international organizations, leaving 85 unique States & territories

Participation by region

Sorted high → low by Member-State participation rate (▼ column). Departures and EI shown for context.

Values in parentheses ( ) represent submissions from different entities within the same state, territory, or international organization.

Region	Departures	% World Traffic	EI	States	Member States	Participation ▼	Territories	Government	Other	Intl Orgs	Same State Submiss.	Total Responses
1. SAM	1,992,243	5.23%	76.4%	10	13	77%	0	13 (3)	0	0	3	13
2. NACC	11,425,036	30.00%	65.7%	15	22	68%	3	19 (2)	3	2	4	24
3. APAC	12,612,549	33.12%	68.3%	18	39	46%	2	20	0	3	0	23
4. EUR/NAT	9,536,059	25.04%	77.8%	24	56	43%	0	26 (2)	0	2	2	28
5. MID	1,485,978	3.90%	77.4%	4	15	27%	0	4	0	0	0	4
6. ESAF	774,521	2.03%	61.2%	5	24	21%	0	7 (2)	0	0	2	7
7. WACAF	257,407	0.68%	61.1%	4	24	17%	0	4	0	0	0	4
GRAND TOTAL	**38,083,793**	**100%**	**70.4%**	**80**	**193**	**41%**	**5**	**93 (9)**	**3**	**7 (1)**	**12**	**103**

Participation = unique Member States that responded / ICAO Member States in the region (territories and international organizations excluded). 'Territories' (e.g. Cayman Islands, Bermuda, Montserrat in NACC; Hong Kong & Macao, China in APAC) responded but are counted separately, not in the Member-State participation rate. 'Same State submiss.' = submissions beyond the first from the same State: ***NACC (Dominican Republic ×2, Mexico ×2, United States ×2, Guatemala ×2); SAM (Paraguay ×3, Chile ×2); EUR/NAT (Ireland ×2, Armenia ×2); ESAF (Namibia ×2, Kenya ×2). IFATCA responded in two regions, so regional Intl-Org counts sum to 7 while there are 6 unique organizations.***

CROSS-ANALYSIS

From results to strategic insight

What the answers reveal when crossed - with each other, with USOAP EI, and with traffic volumes

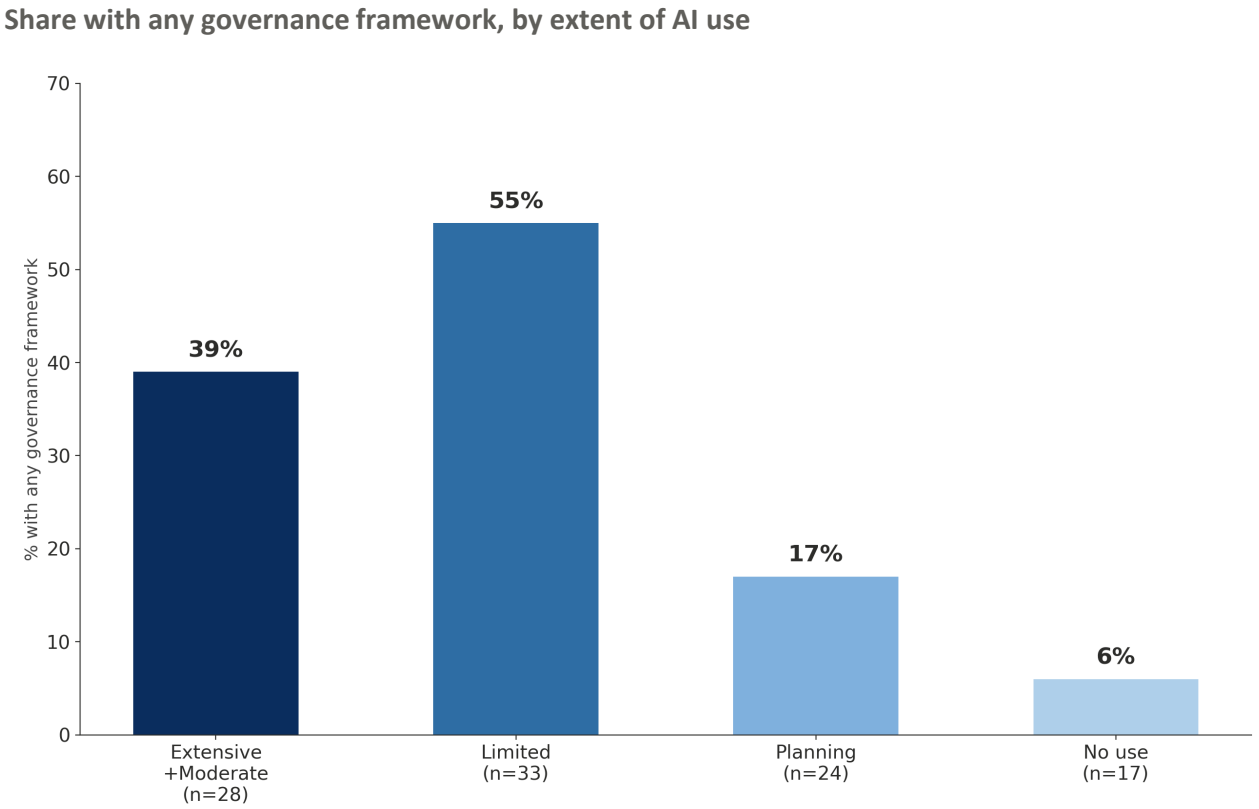
INSIGHT 1 · THE PROBLEM

Governance is not keeping pace with adoption (Q4 × Q7)

Among the 61 States already using AI, how many have a governance framework?

52%

32 of the 61 States already using AI (extensive, moderate or limited) have NO governance framework in place - even Limited users, where the rate is highest, sit at just 55%.



KEY MESSAGE AI deployment is advancing faster than governance. Across every level of active use, a majority of States operate without a dedicated framework - the central gap.

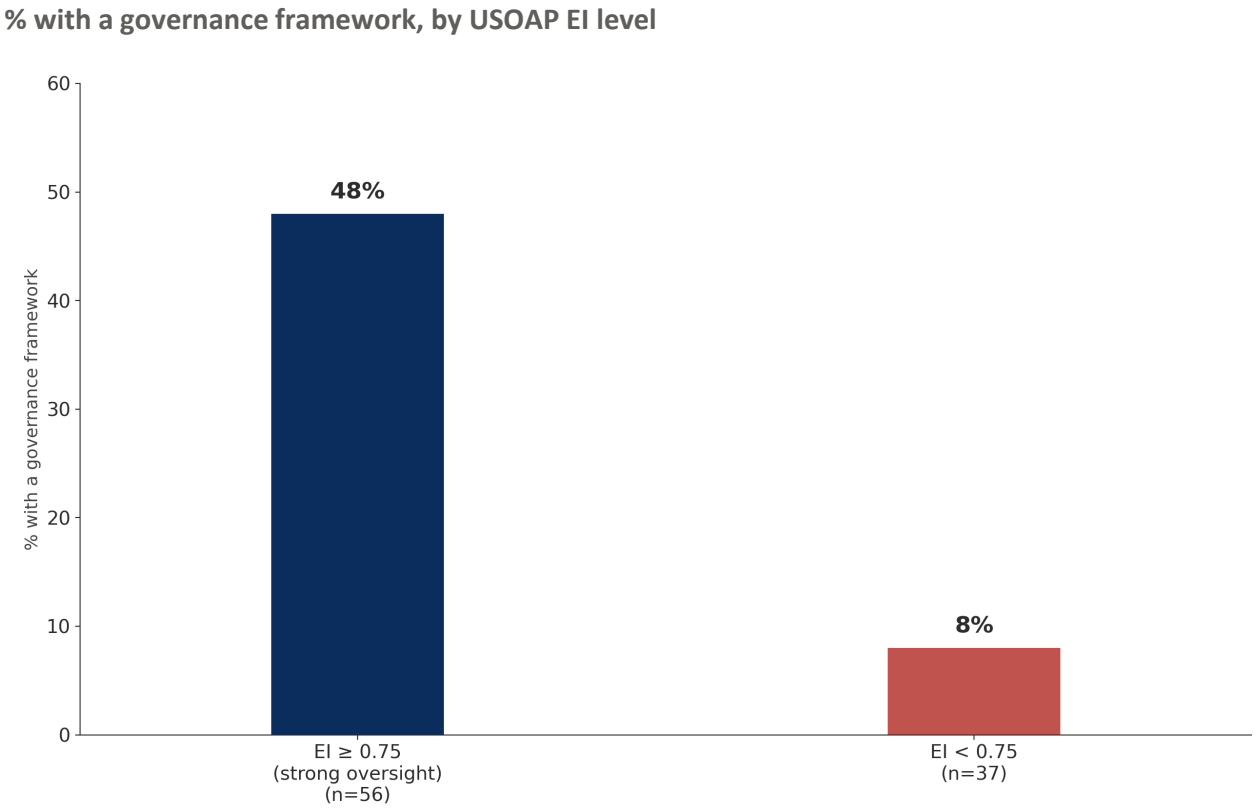
INSIGHT 2 · THE FOUNDATION

Stronger safety oversight, stronger AI readiness (USOAP EI × Q7)

Are States with higher Effective Implementation (EI) more prepared for AI governance?

48% vs 8%

States with EI ≥ 75%, 48% of them have an AI governance framework; below 75%, only 8%.



KEY MESSAGE AI readiness builds on existing safety-oversight foundations. States with mature USOAP systems are far better placed

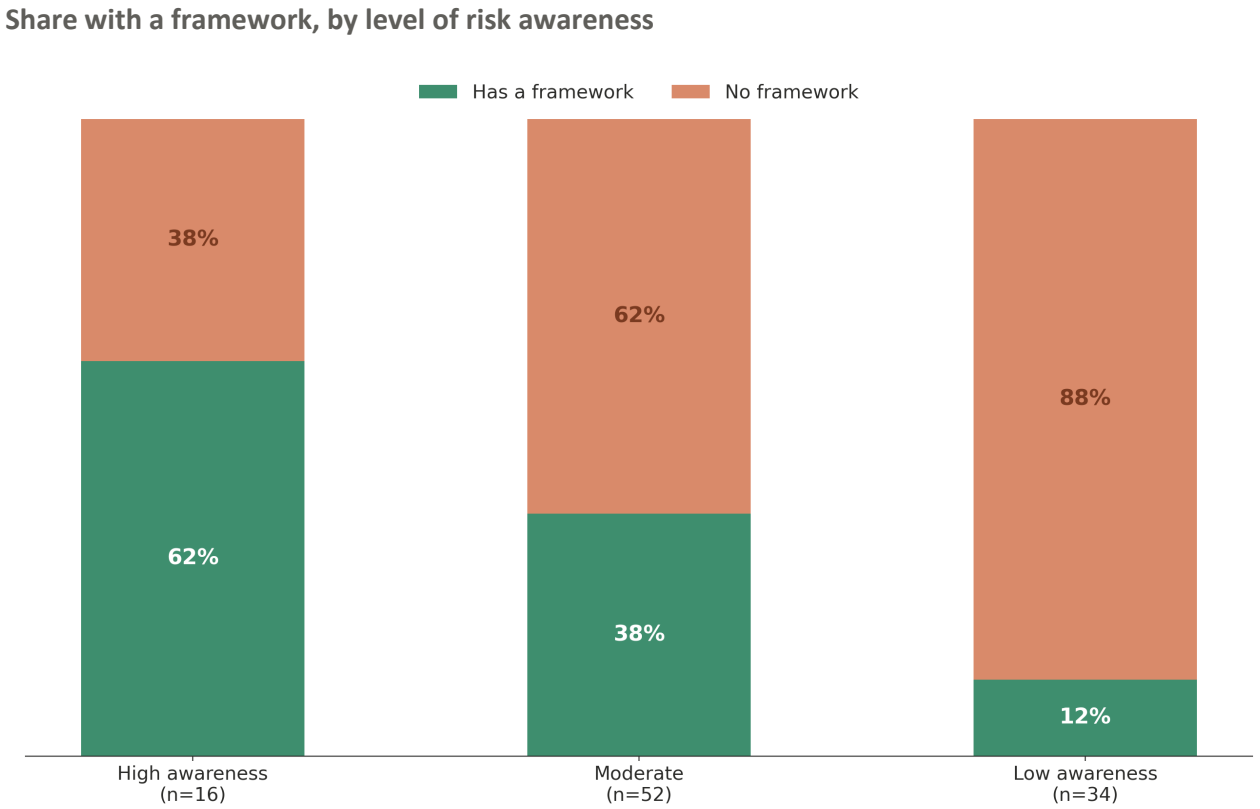
INSIGHT 3 · THE DIAGNOSIS

Awareness without action (Q6 × Q7)

Do States that recognise the risks actually have a governance framework?

56%

Of the 68 States with moderate-or-higher risk awareness, 56% still have no AI governance framework. Framework rates do rise with awareness (12% → 38% → 62%).



KEY MESSAGE The bottleneck is capability, not awareness. Most States that already see the risks have not built a framework

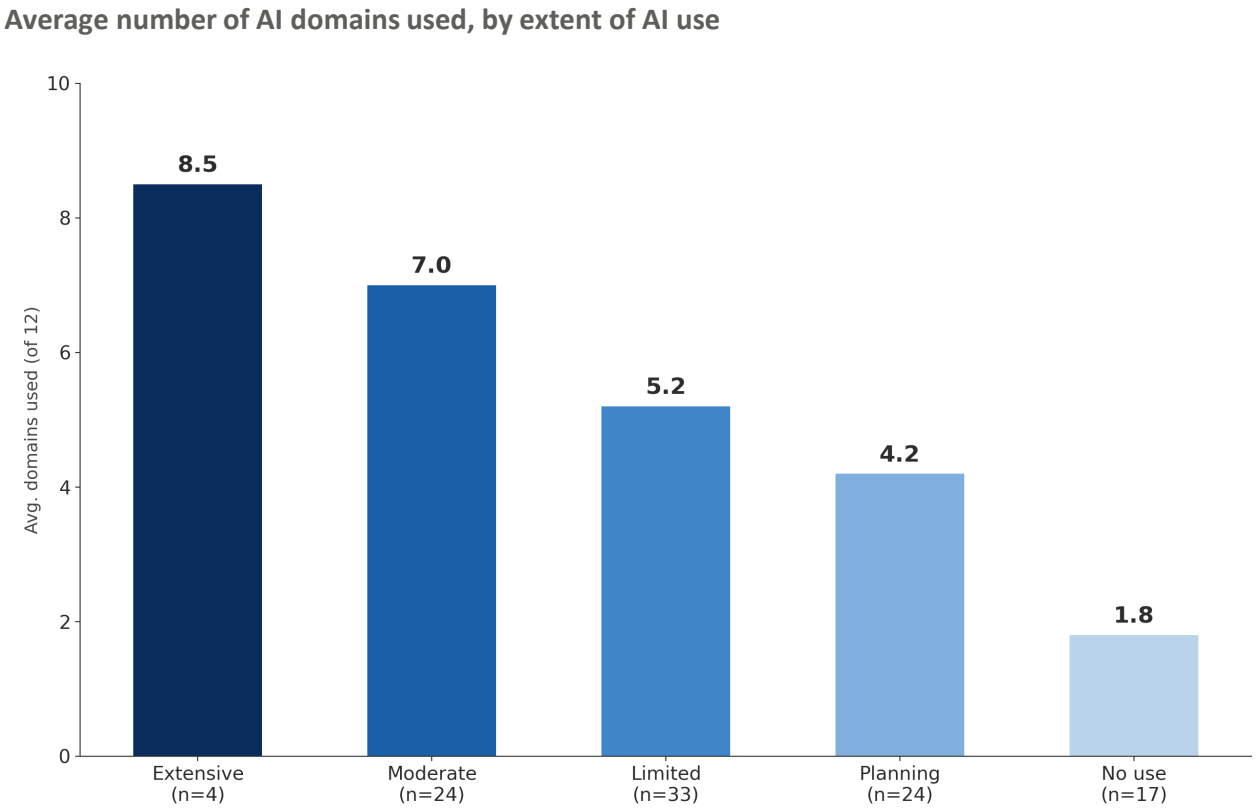
INSIGHT 4 · THE PATTERN

Greater maturity, broader AI use (Q4 × Q5)

Do more mature States deploy AI across more aviation domains?

8.5 → 1.8

Extensive users apply AI across 8.5 of 12 domains on average; non-adopters, just 1.8 domains



KEY MESSAGE Maturity and breadth move together. Helping States advance in maturity will naturally broaden the safe, useful application of AI across the aviation system.

INSIGHT 5 · THE SCALE EFFECT

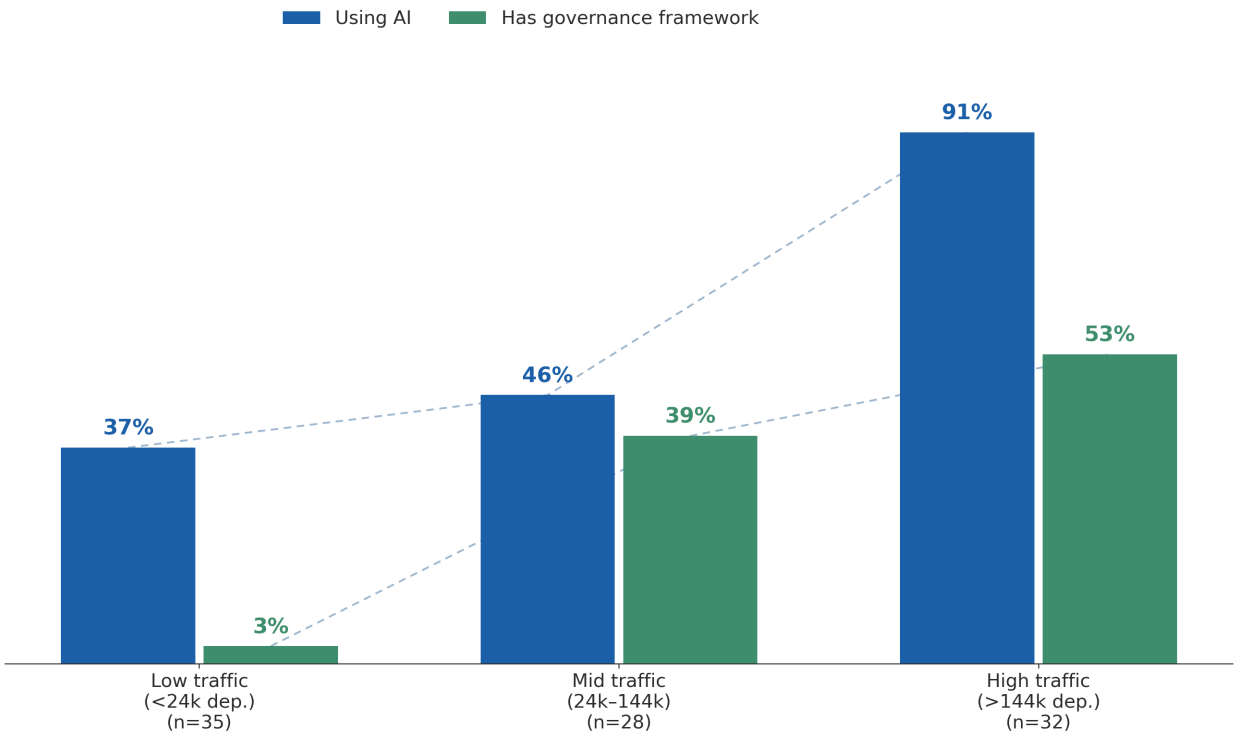
Busier skies, more AI — and more governance (Traffic × Q4/Q7)

Do States with higher traffic (scheduled departures) adopt and govern AI more?

91% vs 37%

91% of the highest-traffic States use AI, versus 37% of the lowest. Framework rates rise the same way: 3% → 39% → 53% across traffic levels.

AI use and governance, by scheduled-departure volume



KEY MESSAGE Capability is concentrating in larger aviation systems while smaller, lower-traffic States lag on both adoption and governance. Without support, the gap will widen - an equity case for ICAO action.

What the survey shows us?

THE MANDATE

Assembly A42

Build and develop a strategic vision and high-level framework for the use of AI in aviation

→

THE BASELINE

Where States are

Early adoption, thin awareness, few frameworks (Q4–Q9).

→

THE GAPS

What blocks them

Limited expertise + missing standards lead by far (Q10).

→

THE DEMAND

What States want

Their stated needs inform the framework's proposed pillars (Q11).

Three proposed pillars - grounded in what States told us they need

1

Global guiding principles

Establish a shared, high-level baseline for AI in aviation.

reflects 71 States citing the standards gap

2

Training & capacity building

Build the AI expertise States lack

supports the most-cited challenge (skills)

3

Safety assurance & risk models

Guidance on assurance, certification, and AI risk assessment

ICAO's core safety role; 55–58 requests

Ontology

How to accelerate digitalization with AI

Not quite there yet : But it is looking more and more possible

Use Case for Systems Approach

STPA Deconstructor — From Accident Report to System Model
https://aviationbrainstorm.github.io/STPA-Sample/

Safety-Benefit Explorer — BFO ontology ↔ STPA (ADS-B & collision avoidance)
https://aviationbrainstorm.github.io/STPA-Ontology-Example/

Thank You



ICAO