

AIC4ATM

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AI is a Tool. Compliance is a Choice.

Digital Sky Marketplace, 12 October 2026
Brussels

AIC4ATM in a nutshell

AI is being adopted across air traffic management and airport operations faster than the means of demonstrating that it is safe, explainable and lawful. AIC4ATM builds those means.

01

The gap

The EU AI Act and the EASA AI Roadmap require AI in critical infrastructure to be explainable, auditable and continuously monitored. Dedicated aviation-specific mechanisms for demonstrating that compliance are still missing.

02

What we are building

A modular, six-layer AI Compliance Engine: risk categorisation, a graph-based Compliance Traceability Graph, machine-readable compliance logic trees, automated checklists and interfaces for human oversight.

03

How

Top-down mapping of European legal frameworks meets bottom-up insight from ATM stakeholders and airport deployers, with a phased development roadmap guiding the concept

30 months

2026 – 2028

8 work packages

two reporting periods

6 partners

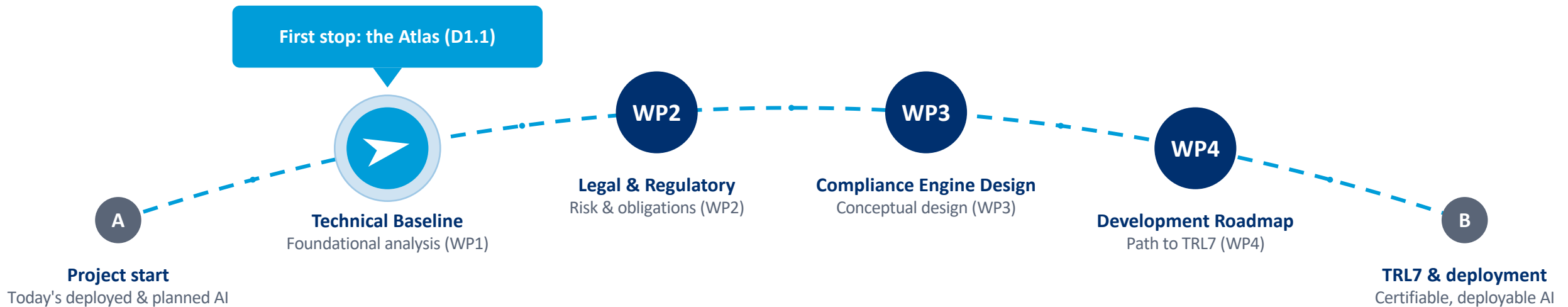
4 countries

EUR 999 482

EU funding

AIC4ATM Our flight path to the Compliance Engine

Four technical work packages chart AIC4ATM's course from use-case evidence to a deployable Compliance Engine — first stop: the Atlas.



AIC4ATM The ATM AI Use Cases Atlas

An interactive, evidence-mapped catalogue of the atomic AI-enabled functions already appearing in European ATM and airport operations. Each entry is a single function with a distinct input-to-output purpose, user and authority boundary — not a product, not a system. One system may contain several use cases; several systems may implement the same one.

83

atomic AI-enabled
use cases, fully profiled

69

fields in every
use-case profile

351

sources directly linked
to at least one profile

323

records in the
structured scoping
corpus

68

typed relationships
between profiles

Browse the
interactive atlas



The atlas is a static viewer: HTML, CSS and JavaScript, plus one canonical JSON file. There is no database, no build step and no server-side code

What it is not. A structured scoping and evidence-mapping baseline — not a product directory, not a certification register, not a completed systematic review.

AIC4ATM 69 documented fields per use case

The fields separate **operational function**, **technical mechanism**, **data** and **integration**, **authority** and **assurance**, **evidence** and **maturity**, and **relational traceability**.

43 Baseline profile

Identity, description, ATM domain, operational phase, functional clusters, technology family and model type, learning approach, input data and provenance, output or action, interfaces, human end user, operational design domain.

19 Architecture-derived evidence

Catalogue object kind, scope boundary, AI relevance status and basis, evidence type and access, repository provenance, AI-component maturity, system adoption, SESAR stage and TRL, authority and override, model update regime, performance monitoring.

5 Final taxonomy

Operational context tags, AI learning paradigm tags, AI technique tags, system pattern tags, data modality tags.

2

Relational model

Evidence record identifiers and relationship identifiers, giving bidirectional traceability between profiles, sources and curated crosswalk links.

Interpretation rule. A populated field is not necessarily a verified operational claim. Read each value together with evidence confidence, maturity basis, evidence type and access, source provenance and the stated limitations.

AIC4ATM What the Atlas provides

Compliance and assurance questions raised by AI-enabled ATM systems.

Provides

- A stable catalogue of characteristic AI-enabled functions relevant to ATM/ANS and defined adjacent boundary domains.
- A harmonised profile model covering **purpose, operational context, technical mechanism, data, interfaces, authority, assurance** and **evidence**.
- A strict functional hierarchy and a single reader-facing primary AI technology classification.
- An Evidence Library linked bidirectionally to use cases, plus a wider structured Literature Collection.
- A reviewable baseline for identifying compliance-relevant gaps.

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Six Level-1 clusters, fifteen Level-2 subclusters

**Strict two-level hierarchy**

Every use case has one primary assignment at Level 1 and one at Level 2. The fifteen subcluster counts sum to 83.

Each cluster and subcluster is published with its definition, so a membership decision can be checked against a written rule.

The four largest subclusters are trajectory, intent and flight decision support (11); network forecasting and situational awareness (10); flight safety, anomaly and contingency management (9); and conflict resolution and separation control (8).

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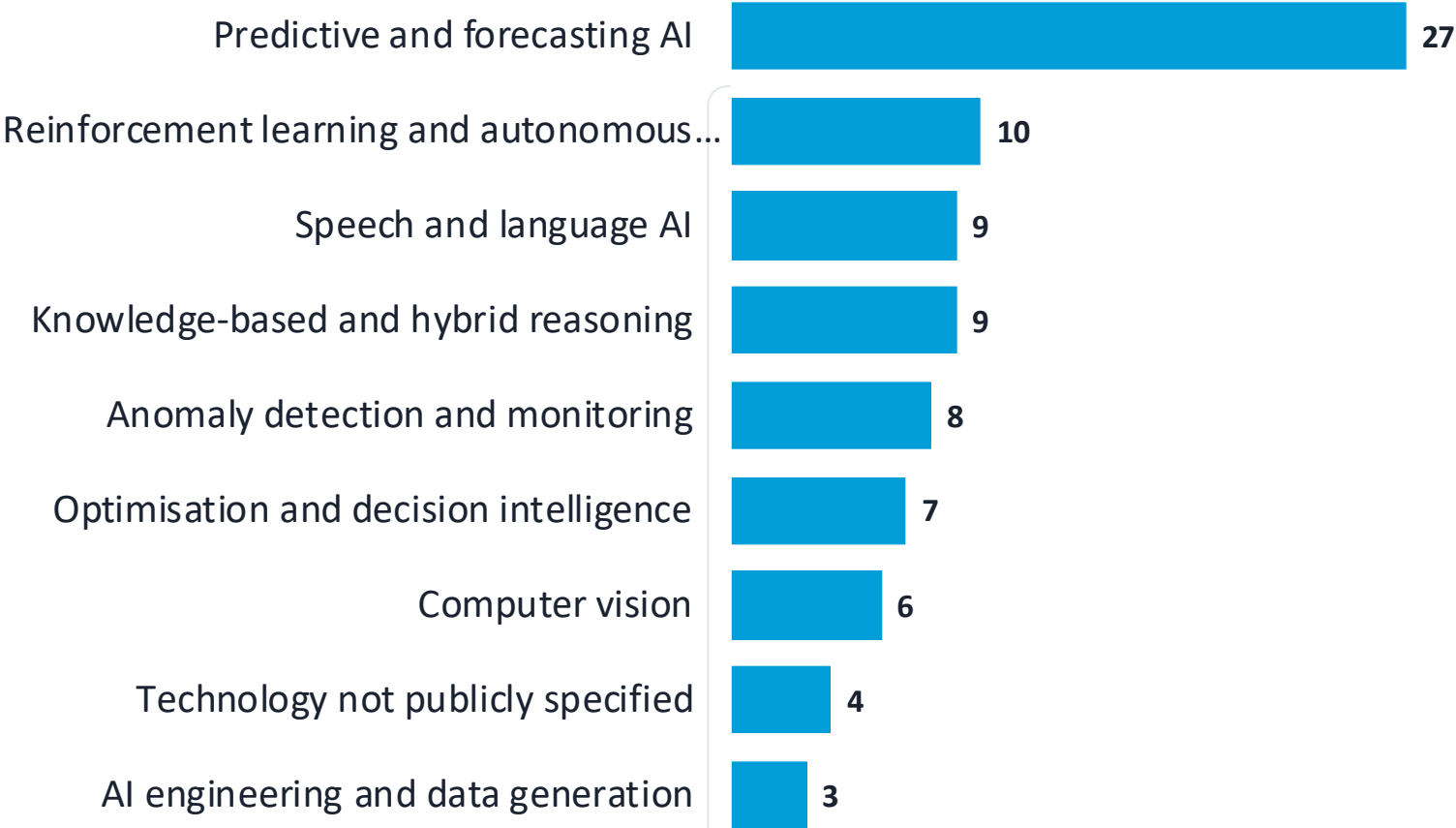
Nine mutually exclusive primary technology families

One primary family per use case

The primary technology map is one-dimensional and reader-facing. The family is assigned from the dominant technical mechanism that produces the characteristic output or action.

Specific models, learning paradigms, secondary technologies, system patterns and data modalities remain separate profile metadata rather than competing classifications.

Technology not publicly specified is an explicit evidence limitation, not a technical family invented by the atlas. It prevents undocumented AI methods from being inferred from a high-level system description.

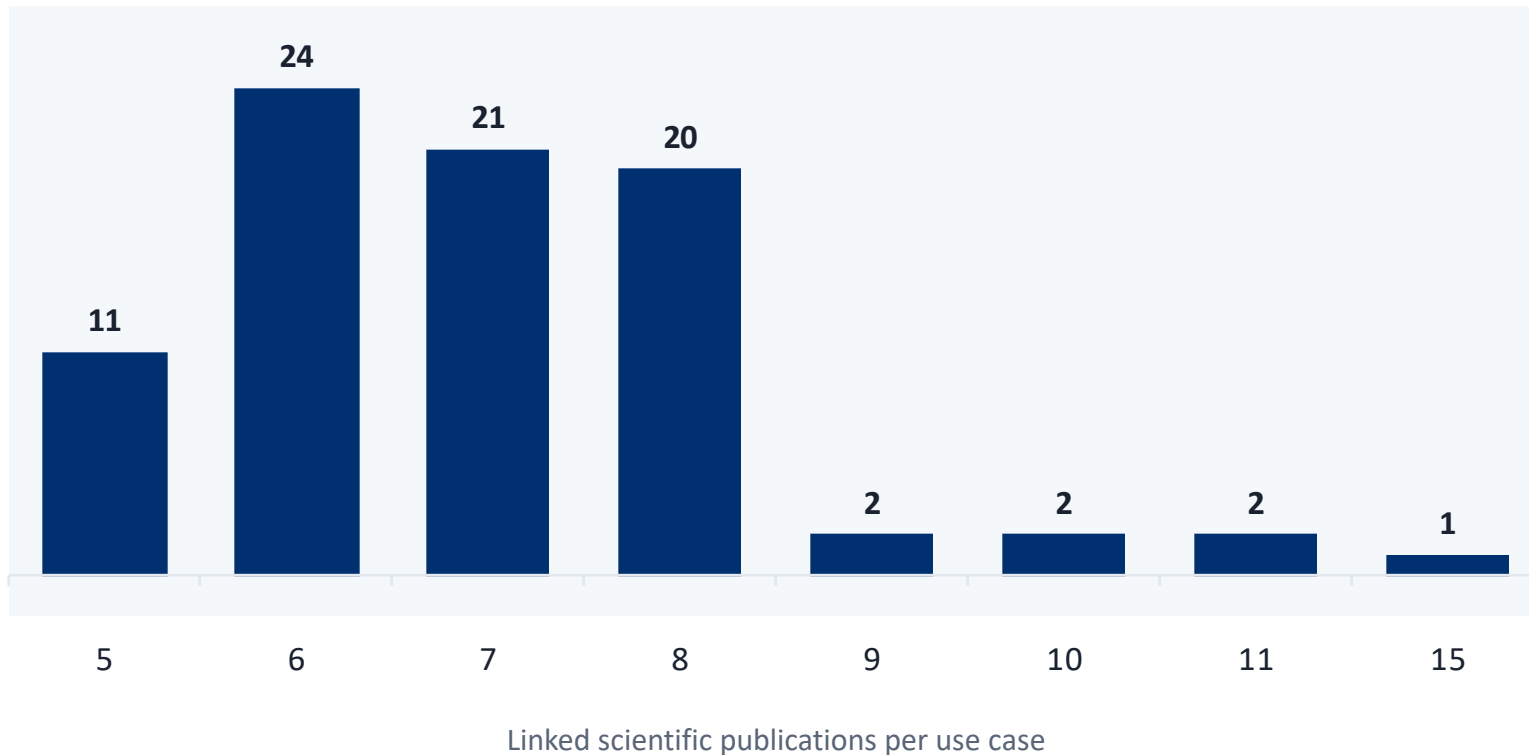


Membership is published per family. Predictive and forecasting AI covers 27 profiles including UC-001 4D trajectory prediction; reinforcement learning and autonomous control covers 10, including UC-019 autonomous separation assurance.

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Scientific evidence coverage per use case

Release 6.0.2 enforces a minimum of five linked scientific publications per use case, combining newly researched sources with previously underused records from the literature collection.

**581**

scientific evidence-to-use-case links
from 293 publications

678

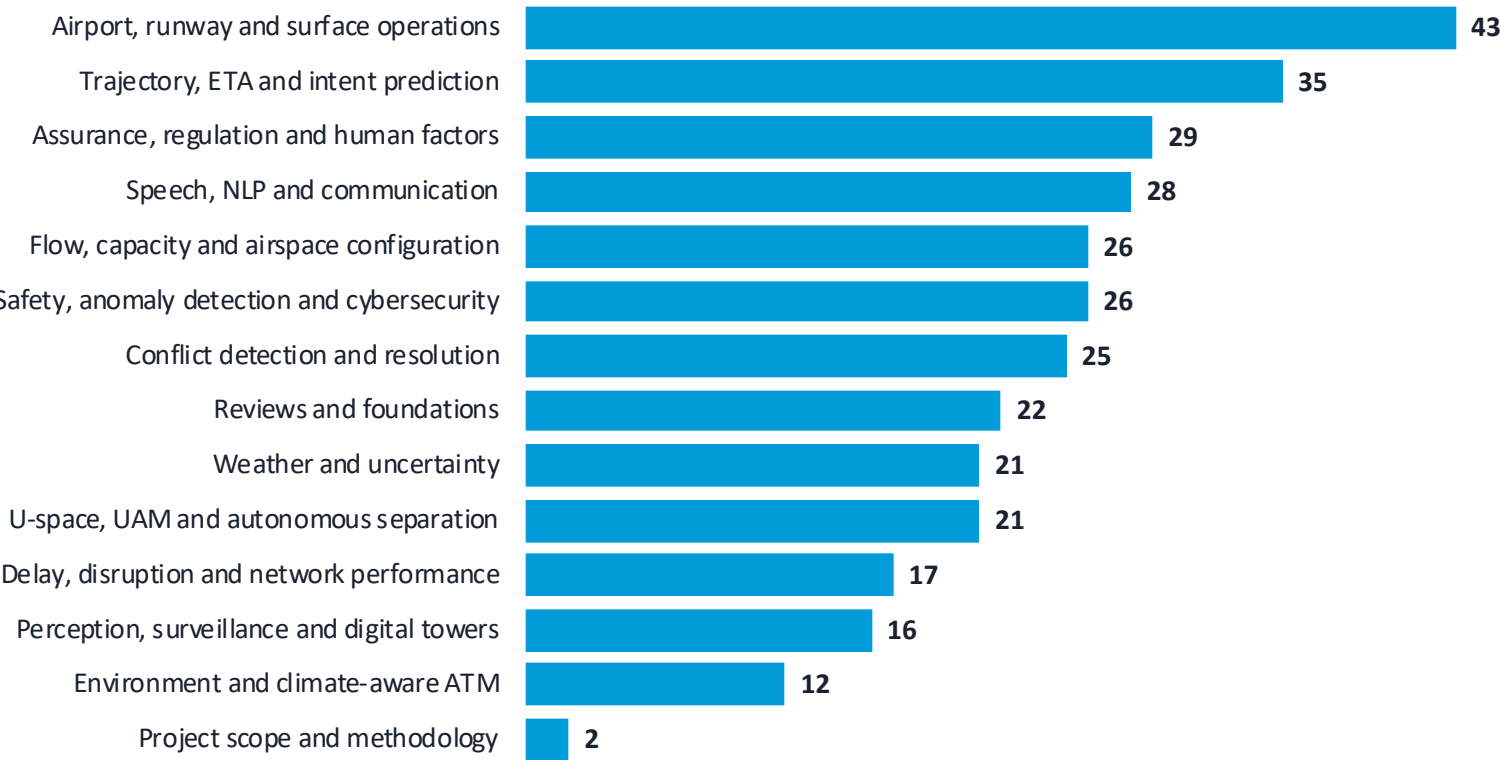
total evidence links from the 351-
record Evidence Library

5 · 7 · 15

minimum, mean and maximum
publications per use case

AIC4ATM 323 records under 14 controlled themes

The literature collection is the wider structured scoping corpus, held separately from the Evidence Library so that the evidence base of a profile is not inflated by background reading.

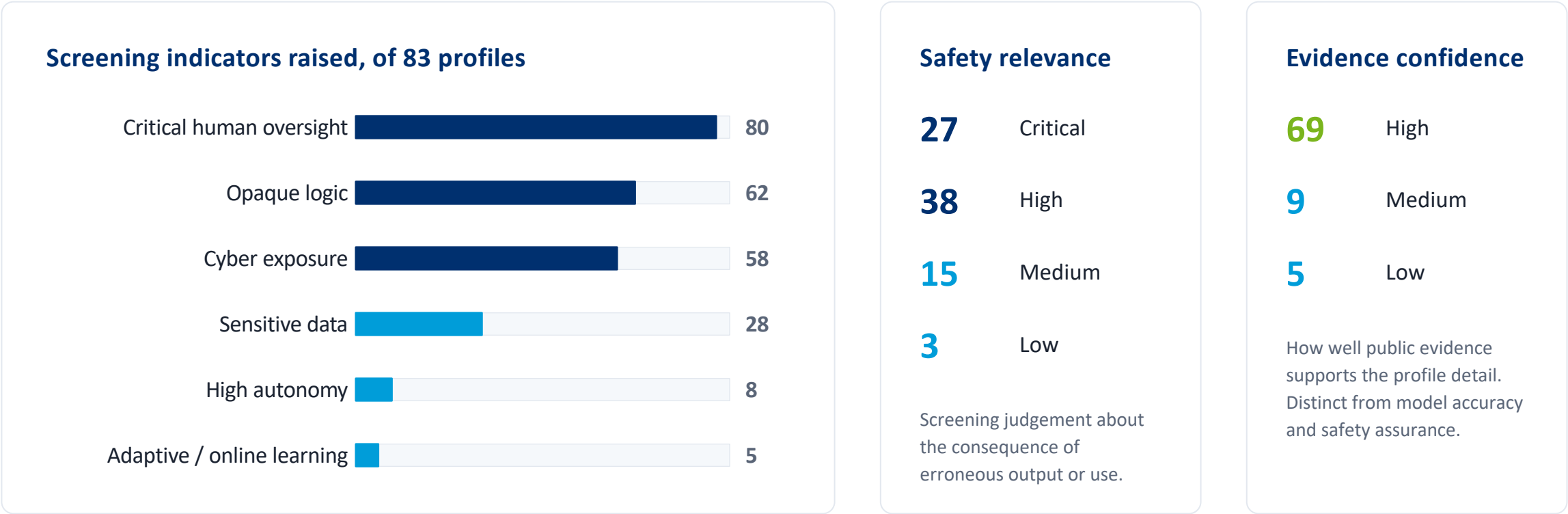


Eight operational scopes

- Flight / multi-domain 88
 - Aerodrome / tower 62
 - Cross-domain 61
 - Network / ATFM 29
 - TMA / approach 25
 - U-space / UAM 21
 - CNS / surveillance 20
 - En-route 17
- Release 6.0.2 normalised the 103 publications added during the evidence expansion into these controlled sets, removing publication-specific single-record labels while preserving the record-specific explanation in each relevance note.

AIC4ATM Assurance and compliance screening fields

The screening fields identify the assurance topics that warrant expert review. They are not legal classifications, safety assessments or hazard classifications, and they are not combined into a composite score.



What current release shows

38

of 83 profiles at M3

Representative operational validation is the most common AI-component maturity level. 22 are at M2, 15 at M1, 7 at M4 and 1 at M5.

75

of 83 with no verified live adoption

Seven are in integrated pilot, shadow or pre-industrial use; one is in limited operational deployment. Adoption is recorded separately from maturity.

71

of 83 at provisional EASA Level 1

The portfolio is concentrated in prediction, assessment and decision support. High-authority autonomous control remains limited.

Findings carried into the expert review

- All 83 use cases meet the five-publication scientific coverage floor; every normalised operational theme holds at least 12 records.
- Scientific breadth is materially stronger, but directness, deployment scope and independent replication still require full-text appraisal.
- EUROCONTROL sources add system context and interfaces; they do not independently prove an AI technique or maturity stage.
- Evidence maturity, system adoption, authority, fallback, monitoring and public-use clearance remain separate fields.

Six partners, four countries

The atlas is under structured expert validation. Reviewers are asked to validate scope and naming, atomic separation or consolidation, functional and technology assignments, authority, ODD, interfaces, inputs and outputs, maturity and adoption, fallback and monitoring, evidence directness, and missing examples.



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Aéroports de Paris

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**Athens
International
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Greece · Partner

Atlas 6.0.2

Schema 6.0.0 · canonical JSON

1 June 2026

Project start

30 November 2028

Project end

101287448

Grant agreement

AI is a tool. The responsibility is ours.
Thank you — let's build it together.