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Governing Digital Platforms in European University Alliances: A Cross-Alliance Survey

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Abstract

European University Alliances (EUAs) are expected to deliver cross-border digital services through shared digital platforms; yet, evidence on governance, architecture, and interoperability remains fragmented. We report a cross-sectional survey (29 Aug 2025–8 Jan 2026) with 38 responses covering 30 alliances (approx. 46% of EUAs), complemented by a light document review. Most alliances are still consolidating platform strategy, relying heavily on institutional tools and favouring incremental integration over platform replacement. Learning management systems are a common anchor service (Moodle is the most frequently reported), while architectures tend to be distributed or hybrid rather than fully centralised. Key constraints include limited dedicated capacity, heterogeneous local IT landscapes and uneven interoperability maturity, with legal and data protection considerations frequently shaping implementation paths. We translate these findings into governance-ready recommendations on decision rights, operating models, and compliance-aware interoperability baselines to help EUAs move from pilots to sustainable cross-border service delivery.

1 Introduction

European University Alliances (EUAs) have quickly become a flagship instrument for cross-border collaboration in higher education. Beyond coordinating joint programmes and mobility, alliances are increasingly expected to deliver a shared digital service layer that spans institutions, jurisdictions, and regulatory regimes. In practice, this digital layer must enable everyday cross-alliance user journeys—from discovery of courses and mobility opportunities to enrolment workflows, access to learning environments, and, increasingly, interoperable administrative processes. These capabilities function as a form of transnational digital infrastructure: if identity,

access, data exchange, and service reliability do not work end-to-end, many alliance ambitions remain limited to pilots or manual coordination.

Building such platforms is not simply a matter of selecting tools. EUAs operate as multi-actor ecosystems in which each partner retains autonomy over local systems, security policies, procurement constraints, and data protection interpretations. This reflects core tensions in platform ecosystems—between standardisation and variety, and between control and autonomy—and underscores why boundary resources and governance mechanisms (e.g., decision rights and accountability arrangements) are essential for a scalable coordination [1, 2, 3].

As a result, technical fragmentation often reflects deeper organisational challenges: unclear ownership, misaligned incentives, uneven capabilities, and missing mechanisms for prioritisation and change control. From an information systems perspective, alliance platforms therefore pose a governance problem as much as a technical one: interoperability, security, compliance, and user experience must be co-designed across organisational boundaries [4, 5, 6]. Accordingly, we frame alliance platforms as a governance challenge: aligning decision rights, accountability, funding and compliance mechanisms to make cross-border digital services operable at scale.

This perspective aligns with research on government-as-a-platform and public-sector platform ecosystems, which emphasises that platform success depends on deliberate governance arrangements that coordinate actors, standards, and shared components to enable sustainable value creation [7, 8]. Recent work further highlights the role of multi-level governance in digital service ecosystems where actors must balance innovation and efficiency simultaneously [9]. In parallel, research on data collaboration stresses that standardisation and data management remain critical enablers for federated ecosystems, even when they receive declining practical attention [10]. For EUAs, these insights translate into a pragmatic reality: alliances must standardise enough to interoperate, while remaining federated enough to respect institutional autonomy.

Despite the strategic importance of alliance-wide digital platforms, empirical evidence on how EUAs are governing, building, and operating these capabilities remains limited. Public discourse often emphasises vision and ambition, while implementation is shaped by local legacies—heterogeneous technology stacks, identity silos, divergent procurement and security practices—and by hard constraints of capacity and funding. Under these conditions, alliances frequently face "coordination overhead": parallel solutions emerge, effort is duplicated, and friction persists for end users. Students, staff, and academics experience the alliance not through strategic documents but through logins, access rights, and the reliability of everyday services.

This paper addresses this evidence gap by providing a cross-alliance baseline of how EUAs approach shared digital platforms, focusing on governance arrangements, architectural strategies, and interoperability constraints. We report results from a cross-sectional survey complemented by document review and comparative analysis. Our aim is explicitly operational: to translate observed patterns into actionable implications for alliance technical roadmapping and governance, and to inform European-level actors seeking scalable impact from funding and policy instruments.

Contributions (Governance & Policy). This paper makes three concrete contributions. First, it provides a cross-alliance baseline (29 Aug 2025–8 Jan 2026; 38 responses; 30 alliances; approx. 46% coverage) to support evidence-based governance and policy decisions on shared digital platforms. Second, it identifies recurring governance bottlenecks—capacity gaps, coordination overhead, unclear ownership/decision rights, and legal/regulatory friction—that shape implementation paths. Third, it derives actionable governance implications on decision rights, operating-model choices, and compliance-aware interoperability baselines to help EUAs move

from pilots to sustainable cross-border service delivery.

We organise the study around three research questions. First, how are EUAs currently designing and operating their digital platforms in terms of platform governance arrangements and operating model (RQ1)? Second, which interoperability, security, and compliance constraints most strongly shape implementation paths and perceived service maturity (RQ2)? Third, how do differences in organisational capacity and coordination and accountability mechanisms influence user-facing outcomes and the sustainability of alliance-wide digital services (RQ3)? By answering these questions, the paper contributes empirical evidence and a governance-informed framing that positions alliance platforms as a key arena of cross-boundary information management in the European higher education ecosystem.

2 Methodology

We conducted a cross-sectional descriptive study using an online survey, complemented by a light document review to triangulate and contextualise survey responses. We reviewed publicly available alliance digital strategies and EU-level policy/monitoring documents, including the European higher education interoperability framework [11], to contextualise responses. The target population comprised the 65 European University Alliances (EUAs) active at the time of the survey. Invitations were distributed through UNINOVIS partners, the FOREU4ALL IT & Digitalization Topical Group [12], and national/regional EUA networks.

2.1 Instrument and data collection

The survey contained 13 items combining closed-ended questions and short open-ended prompts covering: (i) platform approach (open-source, licensed, in-house, or combinations), (ii) governance and decision-making model (centralised vs distributed IT office/technical body), (iii) core services and functional coverage (e.g., LMS, catalogue, mobility workflows), and (iv) retrospective assessment (lessons learned and whether the same approach would be chosen again). Data were collected between 29 August 2025 and 8 January 2026. Some responses were submitted by email and entered manually by the corresponding partner. The survey is publicly available in [13].

2.2 Data handling and analysis

Quantitative analysis used counts and percentages, implemented in R [14]. When multiple responses were received for the same alliance, they were consolidated: for platform status we retained the most conservative value; for governance approach we prioritised the IT-expert response when available. Open-ended responses were analysed through thematic coding: recurrent labels (e.g., resources, interoperability, legal constraints) were grouped into broader themes and quantified by the number of alliances mentioning each theme. Two researchers iteratively refined the codebook; disagreements were resolved by discussion.

2.3 Ethics

Participation was voluntary and anonymous. Respondents could optionally provide contact details to receive study results or enable follow-up clarification. Consent was obtained at the start of the questionnaire.

3 Results

This section reports the main findings from the survey, combining descriptive statistics with a thematic analysis of open-ended responses. Quantitative results summarise reported platform approaches, maturity status, and organisational arrangements across responding alliances. Qualitative results capture recurring constraints and perceived drawbacks that shape implementation choices.

3.1 Quantitative results

The survey yielded 38 responses from 30 alliances, representing 46.2% of all EUAs active at the time of data collection (Figure 1, column "total"). Among respondents, 36 indicated interest in receiving the survey results, and additional interest was expressed when the survey was presented within the FOREU4ALL context. Most responding alliances (73.3%) belonged to the first and second EUA generations.

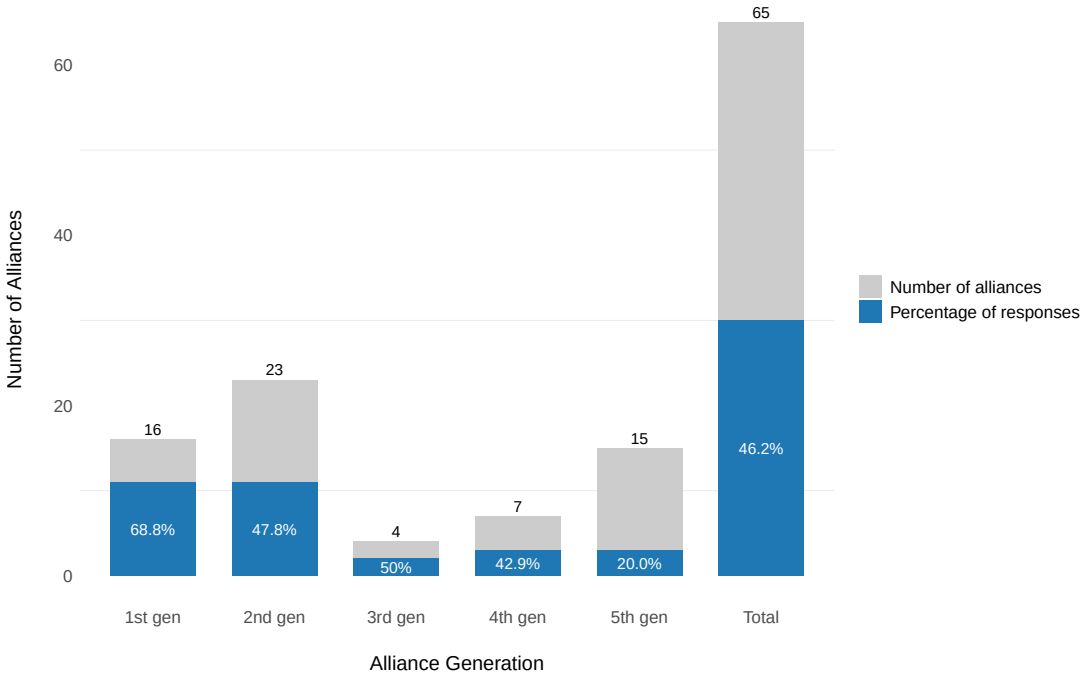

Figure 1: Survey coverage by EUA generation. The number of alliances per EUA generation (grey) and the percentage of alliances per EUA generation that responded to the survey (blue) are represented. When multiple responses were received for the same alliance, they were consolidated into a single alliance-level record for analysis.

Platform approach and software portfolio. Alliances most frequently reported developing their digital platforms using a combination of software solutions (53.3%), followed by open-source software (23.3%) and in-house platforms (13.3%) as shown in Figure 2. A further

10% reported that they did not yet have a digital platform. Among alliances selecting a "combination" approach, the most common configuration involved an LMS (e.g., Moodle or ILIAS) complemented by additional tools and/or in-house developments.

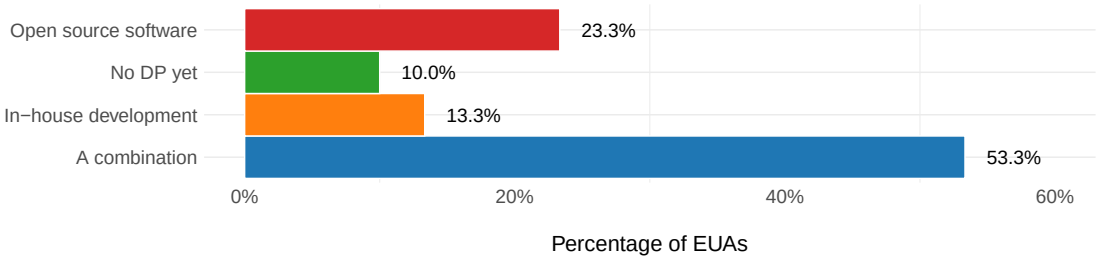

Figure 2: Software portfolio strategy for alliance digital platforms (open-source, licensed, in-house, or mixed).

Learning services as anchor components. Reported LMS usage indicates that Moodle is the most widely adopted system among respondents (46.7%), with ILIAS used by 6.7%. Other systems (e.g., October CMS and Blackboard) were each reported by 3.3% of alliances. In organisational terms, alliances more often reported a distributed LMS approach (46.4%) than a centralised one (32.1%), while a centralised course catalogue was commonly reported in both models.

Platform maturity status. Respondents characterised the development status of their digital platform using four predefined stages: Not started, Early stage (0–32%), In progress (33–65%), and Advanced (66–100%). A fully completed platform (> 90%) was not provided as a survey option. The stage of maturity was subjective to the person completing the survey, based on the development and testing (and deployment) of the software applications that support administrative, teaching, and research activities. The largest share of alliances (43.3%) reported being in the advanced stage of development, while 26.7% reported early-stage development, 20% reported in-progress development, and 6.7% reported not having initiated platform development (Figure 3).

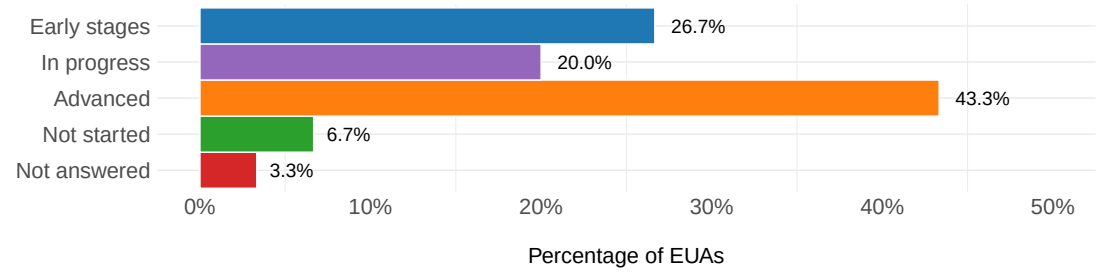

Figure 3: Self-reported digital platform maturity stage among responding alliances divided into not started, early stage (<33%), in progress (33-66%), and advanced (>66%)

IT governance arrangements. Regarding organisational setup, most alliances (56.7%) reported a distributed IT governance model, where a group of IT experts makes IT-related decisions, while 23.3% reported a centralised approach. Two alliances (6.7%) indicated that they had not yet established an IT office, and 13.3% did not answer this question. When disaggregated by alliance generation, both centralised and distributed approaches were observed among first-generation alliances, whereas second-generation alliances showed a marked shift towards distributed IT governance. In more recent generations, both approaches were present, with several alliances reporting that governance arrangements were still under definition.

3.2 Qualitative results

Open-ended questions were used to elicit perceived challenges and drawbacks associated with each alliance's approach. Responses were coded and grouped into thematic categories, which are summarised in Table 1.

The most frequently reported drawback concerned resources (personnel, budget and time), cited by 15 alliances (50%). Respondents highlighted shortages of specialised IT staff and difficulties in retaining qualified personnel. Technical complexity was cited by 14 alliances (46.7%), often referring to integration burden, legacy constraints and coordination overhead. Interoperability challenges were reported by 12 alliances (40%), frequently linked to heterogeneous local systems and varying levels of digital maturity across partners. Heterogeneity of institutional systems was explicitly mentioned by eight alliances (26.7%), indicating that differences in local tooling and processes constitute a persistent barrier to shared services.

Table 1: Drawbacks identified in open-ended responses (themes and frequency)

Theme	Alliances (n)
Resources (personnel, budget, time)	15
Technical complexity	14
Interoperability	12
Heterogeneous and/or obsolete institutional systems	8
Coordination, communication and collaboration across partners	8
Legal/regulatory constraints (e.g., GDPR)	7
Decision-making / unclear ownership	5
Identity and access management	5
No response	4
Diverging priorities/goals/scope	3
Heterogeneous organisations and/or end-users	3
Governance & organizational maturity	≤ 2

Note: Counts represent the number of alliances that mentioned each theme at least once; a single response could be coded into multiple themes.

Legal and regulatory issues were cited by seven alliances (23.3%), with GDPR–related considerations and cross–country legal variation commonly referenced. Coordination, collaboration and communication were also recurrent themes: eight alliances cited these as a drawback and five highlighted decision-making challenges, suggesting that organisational arrangements and decision rights can be as constraining as technical choices.

Finally, respondents were asked whether they would adopt the same approach if starting again. At alliance level, 30% indicated that they would follow the same approach (possibly with minor adjustments), while 23.3% reported that they would choose a different strategy,

most commonly referencing improvements in decision–making, IT governance, interoperability and goal setting. Divergent internal opinions were observed for 10% of alliances that provided multiple responses. A further 6.7% of alliances reported being unsure, and 6.7% considered the question not applicable due to the early stage of their initiatives.

Taken together, these results suggest that alliances face a common set of constraints that shape platform progress: limited dedicated capacity, heterogeneous institutional environments, and uneven interoperability readiness, compounded by legal and coordination challenges. These recurring themes provide the empirical basis for the practical and policy implications discussed in Section 4.1.

4 Discussion

This study provides a cross-alliance snapshot of how European University Alliances are approaching shared digital platforms, and what repeatedly constrains progress in practice. Overall, the findings point to digitalisation as a necessary but structurally challenging enabler of alliance impact, rather than a straightforward driver of integration. While prior work emphasises the potential of digital platforms to support virtual and hybrid learning, shared repositories, and new mobility formats [15, 16, 17], the present evidence shows that alliances pursue these goals in the absence of a stable, commonly adopted reference model for platform development and operation.

Three patterns stand out. First, alliances overwhelmingly favour pragmatic, incremental integration over "big-bang" platform replacement. This is consistent with the strong reliance on institutional tools reported in the survey and with the prevalence of mixed software portfolios (Figure 2). Second, learning environments are frequently used as an anchor service: LMS choices (often Moodle) provide an immediately useful, user-facing entry point and a low-friction starting layer for collaboration across partners. Third, architectural choices tend to be distributed or hybrid rather than fully centralised, reflecting both the reality of heterogeneous institutional landscapes and the governance challenge of operating cross-institution services without a single controlling organisation.

A central implication of these findings is that alliance platform outcomes are constrained less by the availability of tools and more by coordination capacity: decision rights, scope control, and the ability to operationalise shared services under real-world constraints. Across alliances, the dominant drawbacks reported in open-ended responses cluster around limited dedicated resources, technical complexity, interoperability and legal constraints (Table 1), as evidenced in previous studies [16, 17, 18]. These constraints are mutually reinforcing. Limited capacity makes it difficult to sustain architecture, security and service management work; heterogeneous local systems increase integration effort; and legal/compliance uncertainty discourages standardisation and cross-border data exchange. In this context, interoperability becomes an organisational problem as much as a technical one: late or ambiguous decisions on data contracts, identity baselines and integration patterns increase "interoperability debt", which then propagates as alliances add services and user journeys.

The observed diversity of platform strategies is also shaped by path dependency. At the time that first and second-generation alliances were formed, the absence of mature, alliance-ready open-source platforms narrowed feasible options. Alliances therefore often chose between developing bespoke solutions or relying on proprietary ecosystems, despite the long-term sustainability risks this entails under constrained resource conditions.

The distribution of platform maturity levels (Figure 3) should therefore be interpreted as an outcome of governance and operating-model choices as well as technical progress. Alliances

that establish clear ownership and decision-making mechanisms early can converge on shared baselines (identity, access control expectations, data semantics, logging/auditability) and reduce duplication. Conversely, when platform scope and operating model are decided late, alliances often rely on ad-hoc integrations and partial solutions, which may deliver short-term wins but create longer-term fragmentation and inconsistent user experience. This aligns with prior work on multi-actor digital service ecosystems and platform governance, which emphasises the importance of deliberate governance mechanisms and standardisation to sustain collaboration and public value creation in federated settings [7, 8, 9, 10].

Overall, the evidence supports a pragmatic reading of "platform building" in EUAs as a long-horizon service transformation effort rather than a one-time software selection. Success depends on aligning strategy, architecture and day-to-day operations into a credible roadmap that can survive beyond pilot phases. The remainder of this section translates the findings into actionable implications for alliance governance and for funders seeking scalable impact.

This study has limitations. Results are based on self-reported survey data and therefore reflect respondents' perceptions and local definitions of concepts such as "platform" and "maturity". The analysis provides a snapshot in time and may under-represent rapid evolution within alliances. Coverage may be uneven across alliances and domains, introducing non-response bias and limiting generalisability. Finally, the study is descriptive and does not establish causal relationships between governance choices and downstream outcomes.

4.1 Practical and policy implications

Based on the recurring constraints identified across alliances, we outline practical and policy implications for sustainable delivery.

1) Treat governance as delivery infrastructure. Alliances benefit from moving from loosely coordinated project structures to a governance model with explicit decision rights over prioritisation, sequencing and trade-offs. Reported challenges related to decision-making and coordination (Table 1) suggest a recurring risk of "everyone is responsible, therefore no one is". A lightweight but empowered platform-level board (or technical body) with a clear mandate, paired with domain owners (e.g., identity and access, data contracts, mobility workflows, credential services, wallets), can reduce fragmentation and accelerate convergence on shared baselines. Governance should make boundaries explicit: which capabilities are shared by default, which remain local, and how exceptions are handled.

2) Formalise an operating model, not just a roadmap. Alliances should translate platform ambition into service accountability by defining a shared service catalogue, ownership and support model, and realistic operating expectations. In practice, this means budgeting and planning for operational work that is often under-scoped: documentation, monitoring, incident response, security hardening, change management and lifecycle management. A phased roadmap with verifiable deliverables helps, but only if paired with an operating model that clarifies how services are run once deployed. Starting with enabling foundations (identity, access governance, minimal master-data alignment and observability) reduces downstream integration friction and improves the sustainability of later user-facing services (catalogues, back-office integration and credential workflows).

3) Make interoperability a design constraint. Interoperability should be treated as a first-class requirement rather than a downstream integration task. The prevalence of interoperability-related challenges (Table 1) suggests that alliances gain from adopting explicit integration patterns (API-first where feasible), shared data contracts, and a minimal baseline for identity and authorisation [11]. Consistent logging and auditability across participating services

improves diagnosability and accountability in cross-institution operations. Even lightweight, shared KPIs (e.g., adoption, onboarding time, reliability and recovery time) can support evidence-based prioritisation and continuous improvement.

4) Implications for European-level actors and funders. The results indicate a recurring sustainability gap: alliances are expected to deliver cross-border services, but dedicated capacity and long-term operations are consistently reported constraints. Funding and support mechanisms can therefore increase impact by explicitly enabling capability building (architecture, security, IAM, data engineering, service management) and by recognising operational expenditure beyond time-bounded project outputs. Reusable reference architectures, baseline standards (identity/attribute semantics, API guidelines, security and privacy controls) and shared legal/compliance artifacts (e.g., DPIA templates, joint controllership clauses where applicable, risk assessment patterns) can reduce duplicated effort and lower compliance friction. Finally, reinforcing communities of practice and technical assistance programmes can help distribute expertise more evenly across alliances and reduce recurrent reinvention of both technical and organisational solutions.

5 Conclusions

This paper provides cross-alliance evidence on how European University Alliances are designing and operating digital platforms, with a focus on governance, architecture and interoperability. Based on 38 responses covering 30 alliances (approx. 46% of EUAs at the time of data collection), we find that most alliances are still consolidating their platform strategy and tend to favour pragmatic, incremental integration over wholesale platform replacement. Learning management systems frequently act as anchor services (with Moodle commonly reported), while architectures are more often distributed or hybrid than fully centralised. Across alliances, the most persistent constraints are limited dedicated capacity, heterogeneous institutional IT landscapes, and uneven interoperability maturity, with legal and data protection considerations frequently shaping feasible implementation paths.

The findings suggest that progress is less constrained by the availability of individual tools than by the ability to coordinate delivery at alliance level. Alliances that make early, explicit choices on decision rights, scope and operating model are better positioned to avoid fragmentation and interoperability debt. Treating interoperability as a design constraint—through shared data contracts, baseline identity and authorisation expectations, and operational observability—supports more scalable service onboarding and reduces duplicated effort. In practical terms, the results reinforce the value of a lightweight but empowered governance structure (e.g., a platform-level board and domain owners) combined with a service-oriented roadmap that budgets for ongoing operations, security and change control beyond pilot phases.

6 Future Work

Future research should extend this contribution in four complementary directions. First, a longitudinal design is needed to track how governance arrangements, architectural choices and interoperability practices evolve over time, and how these trajectories relate to measurable service outcomes (e.g., adoption, onboarding time, availability, incident recovery and cost). Second, mixed-methods work combining surveys with in-depth comparative case studies would strengthen construct validity and explain why certain approaches succeed under specific institutional constraints such as procurement regimes, staffing models and data protection re-

quirements. Third, developing and validating a shared measurement framework for alliance digital platforms–covering maturity, interoperability-by-design, operating–model readiness and user experience–would enable more robust benchmarking across alliances and funding cycles taking into account the Higher Education Reference Model (HERM) [19], a European model that provides a common framework for capabilities, data, services and technologies, which can be a valuable aid in the implementation of a common architecture within an alliance.

Finally, future work should move from description to actionable experimentation by evaluating reusable building blocks and reference architectures (e.g., identity and access, shared data contracts, mobility workflows and credential services), including the legal and organisational artifacts required to reduce compliance friction and support sustainable cross-alliance operations.

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