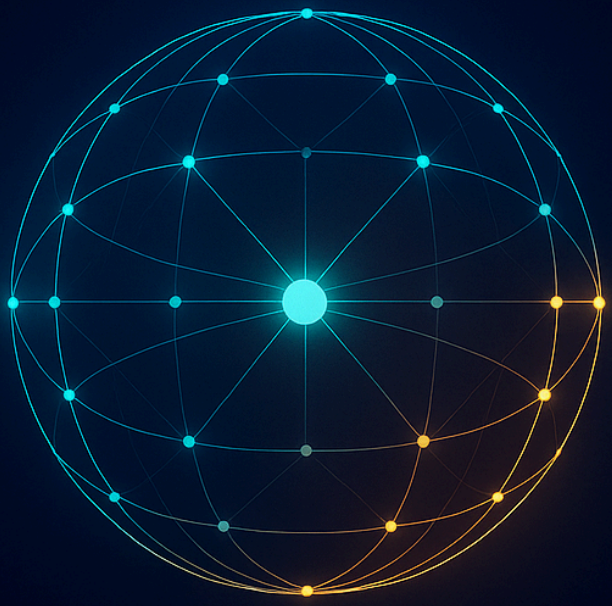
THE UNIVERSAL SPORTS GRAPH

A Protocol for Rights, Reach, and Real-Time Access



A rights registry and clearinghouse standard for live sports

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The Universal Sports Graph: A Protocol for Rights, Reach, and Real-Time Access

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Executive Summary

Live sports distribution is fractured across closed ecosystems, forcing fans through blackout zones, fragmented apps, and high-commitment subscriptions just to watch a single game.

The Universal Sports Graph (USG) defines a neutral interoperability standard for single-game access across leagues and platforms: a **machine-readable rights registry**, a **universal Access API** that issues time-limited entitlement tokens, and a **league-governed clearinghouse** that reconciles revenue and audit logs.

USG converts fragmentation into incremental revenue without cannibalizing subscriptions. Using a **$4.99 Day-Pass** and automated **40 / 40 / 20 split** (Platform / Rights-Holder / Clearinghouse), even conservative adoption yields material upside at league scale. The protocol **transacts entitlements, not streams**, minimizing PII exposure and enabling consent-based identity portability; immutable settlement logs and third-party audit hooks align with **GDPR / CCPA** and regulator sandboxing.

The governance model is **multi-stakeholder and neutral**, distributing standards maintenance and oversight across leagues, platforms, and independent trustees. A **phased Roadmap** (Pilot → Consortium → Industry Standard → Global Interop) and an **Implementation Matrix v1.0** translate the architecture into concrete deliverables, KPIs, and compliance evidence bundles.

Thesis: The future of sports distribution isn't another app — it's a standard. USG treats access as infrastructure — restoring reach for fans, revenue for leagues, and trust for regulators while remaining invisible in the product experience.

Abstract

The Universal Sports Graph (USG) defines a neutral interoperability protocol that turns sports broadcast rights into structured data and access into an API.

Live sports distribution today remains fragmented across closed ecosystems, forcing fans through blackout zones, siloed apps, and redundant subscriptions.

USG introduces three coordinated layers — a rights registry, a universal access API, and a league-governed clearinghouse — to enable per-event authorization, transparent revenue settlement, and compliance-ready audit trails.

By standardizing entitlements as machine-readable objects rather than static contracts, the Graph re-aligns incentives across leagues, platforms, and regulators. Each event becomes a queryable resource: discoverable, purchasable, and interoperable in real time.

Problem — Fragmentation Without Interoperability

The sports distribution ecosystem is converging toward simplification but not standardization.
Every major experiment — from MLS Season Pass and NFL Sunday Ticket to Bally's single-game passes — moves one step closer to direct-to-consumer access, yet each remains bound to a proprietary platform.[1]
Rights are still expressed as legal contracts, not as structured data.
Checkout, authentication, and audience analytics remain siloed within closed systems that cannot interoperate.

The result is a paradox: leagues now own more of their media pipelines than ever before, yet fans face more friction, duplication, and fragmentation than in the cable era.[2]
Without a shared protocol to map, transact, and reconcile rights in real time, the industry cannot scale micro-access, recover lost reach, or build a coherent fan identity layer.
The Universal Sports Graph addresses this structural gap by treating access as infrastructure — transforming broadcast rights from static deals into programmable, interoperable assets.

Table 1 – Current Market Models vs. The Universal Sports Graph

"Table 1 summarizes current distribution experiments such as Bally Sports+ and NFL Sunday Ticket, which test direct-to-consumer micro-access but remain proprietary.[3]"

Case Study	What It Does	What It Proves	What's Missing (Gap vs. USG)	Strategic Implication
Diamond Sports Group / Bally Sports+ (2025)	Introduced single-game pricing for local NBA/NHL broadcasts via Bally Sports+.	Demonstrates demand for pay-per-game access and willingness to decouple from full subscriptions.	Confined to Bally-owned rights; no interoperability, no unified registry, no shared checkout standard.	Validates appetite for micro-access but exposes lack of protocol or portability.
NFL Sunday Ticket (YouTube, 2024–25)	Centralized distribution of out-of-market NFL games via YouTube/Google shows leagues can consolidate	Shows leagues can consolidate rights under one digital platform.	Exclusive to a single tech partner; no universal purchase layer or neutral clearinghouse;	Proof that leagues trust tech partners but still lack open standards — YouTube ≠ protocol.

	rights under one digital platform.[4]		fan data stays platform-bound.	
MLS Season Pass (Apple, 2023–)	League-wide global DTC model for all games within Apple ecosystem.	Validates the league-run access model and integrated UX.	Closed system: no cross-league graph, no inter-app interoperability, subscription-only (no day-pass).	Prototype for league-owned distribution; USG generalizes this across leagues and platforms.
Bundesliga x Mark Goldbridge (2025)	Creator-led distribution and alternative commentary access.	Indicates openness to experimentation in rights expression and access channels.	Content-layer innovation only; no rights or payment interoperability.	Cultural validation: leagues want modularity and reach but lack underlying protocol.
Regional Sports Networks Crisis (2024–25)	Ongoing RSN bankruptcies due to declining carriage and subscription revenue.	Exposes structural instability in regional rights business.	No infrastructure for direct, per-game monetization across partners.	Urgency case: USG offers structural fix through standardized microtransactions.

Proposal — A Protocol for Rights, Reach, and Real-Time Access

The Universal Sports Graph (USG) proposes a standards-based architecture that transforms how live sports are discovered, purchased, and delivered.
Instead of isolated platforms negotiating exclusive access, the Graph establishes a shared, interoperable layer that defines every broadcast right as a **machine-readable object**.
Each game becomes a queryable entry within a rights registry — complete with metadata for ownership, territory, pricing, and validity period — accessible through a universal API and governed by a neutral clearinghouse.

Architecture Overview

Definitions (for reference)
Rights Registry — A continuously updated database expressing who owns which broadcast rights, where, and under what terms.
Entitlement Token — A time-limited, cryptographically signed authorization that grants a viewer access to one event via the Access API.
Clearinghouse — A neutral entity that reconciles revenue, logs transactions, and provides compliance-ready audit evidence.

1. **Rights Graph Layer**
   A continuously updated database encoding who owns which broadcast rights, where, and under what terms. Each event becomes a structured record referencing distribution partners, blackout zones, and access tiers.
   → *[Figure 1 – The Sports Graph Stack]*

2. **Access & Authentication API**
   A standardized interface that enables any authorized app to query, validate, and deliver access.

   When a fan taps "Watch → $4.99 Day Pass," the API determines where the stream resides, processes payment, issues a time-limited token, and routes the viewer directly to the correct platform.

3. **Clearinghouse & Settlement Layer**
   A neutral entity (league-run or consortium-based) that reconciles revenue and data between stakeholders. Each transaction is logged and automatically split (40 % / 40 % / 20 %).

4. **Fan Experience & UX Layer**
   A consistent "Buy Pass / Watch Now" module across all apps — frictionless to users, interoperable beneath the surface.

Together, these layers convert broadcast rights from a static licensing system into a **dynamic, programmable network**.
The Graph does not replace existing platforms; it connects them.

Each layer compounds the last — **rights as data**, **access as API**, **clearinghouse as trust**, and **UX as consistency** *(see Fig. 1 — Sports Graph Stack).*

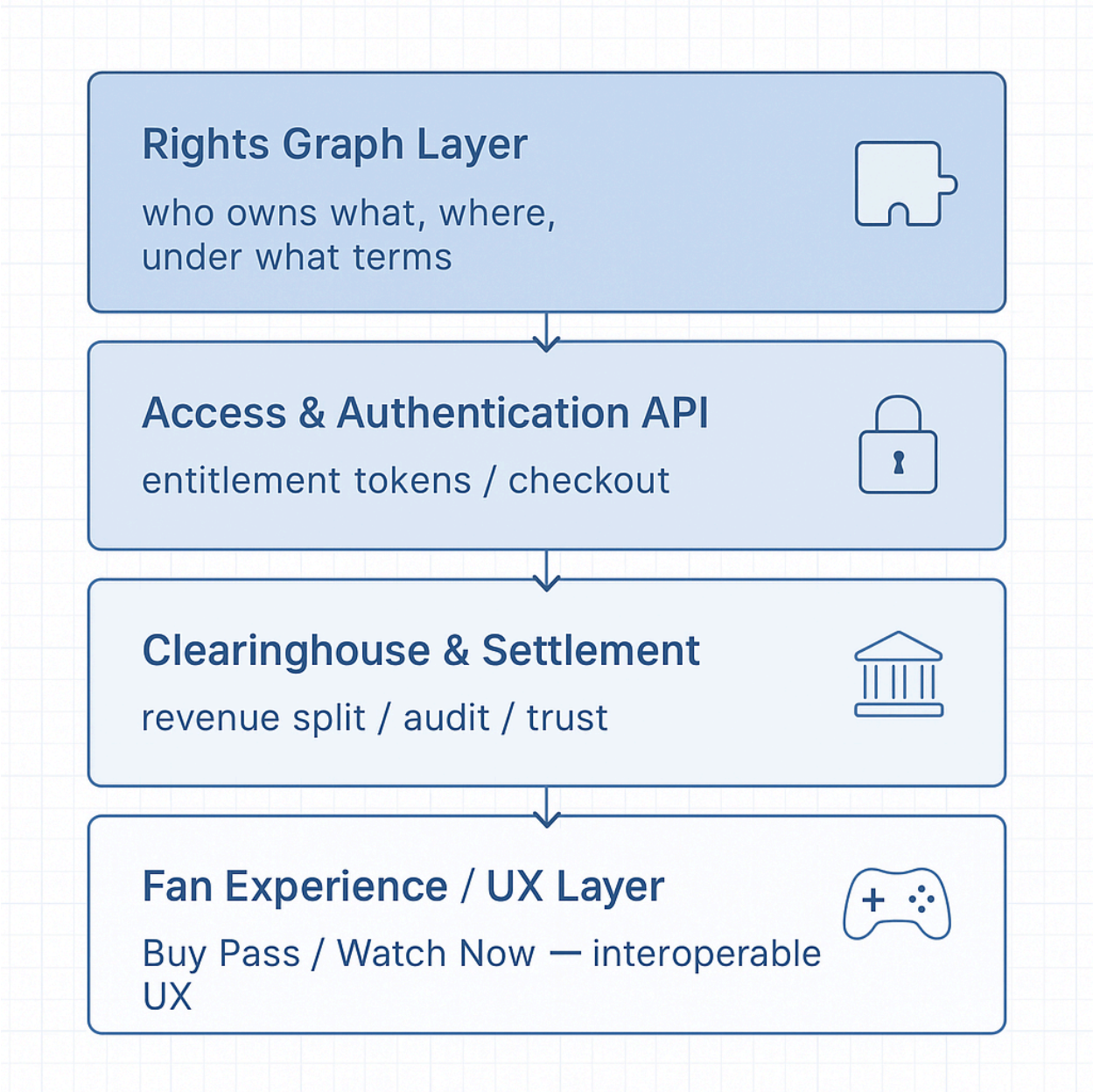

Fig. 1 — Sports Graph Stack

Like other open internet standards (e.g., IETF RFC 3986), the Universal Sports Graph defines each event entitlement as an addressable resource that can be resolved, authenticated, and exchanged programmatically.

Sidebar — Rights as Data (Minimal Schema)

`event_id`, `league`, `home`, `away`, `start_time`, `duration`
`territory[]` (ISO), `blackout[]`, `rights_holder`, `delivery_partner`
`price`, `currency`, `access_window` (UTC start/end), `entitlement_token`
`settlement_split` (platform / rights / clearinghouse)
`privacy_ref` (policy URL), `consent_scope` (analytics, marketing)

Illustrative schema defining how each event becomes a structured, queryable object within the Universal Sports Graph.

Economics — Turning Fragmentation into Incremental Revenue

1. The $4.99 Day-Pass Model

At an average of **$4.99 per event**, even modest adoption rates create material gains:

Adoption Scenario	% of Non-Subscribers	Incremental Revenue per 1 M Fans
Conservative (1 %)	10 000 buyers	≈ $49 900 / game
Moderate (5 %)	50 000 buyers	≈ $249 500 / game
Optimistic (10 %)	100 000 buyers	≈ $499 000 / game

Assumptions: League baselines of approximately *1,000 games per season* and already-sunk content costs mean that day-pass sales represent **incremental yield**, not cannibalization. The Universal Sports Graph **does not replace subscriptions** — it monetizes the margins between them. Settlement flows and stakeholder splits are shown in *(Fig. 2 — Revenue Flow & Settlement).*

Elasticity Note: A ± $1 change in average event price corresponds to roughly ± 20 % revenue delta per million casual fans, holding conversion constant.

For leagues hosting 1 000 + games, even conservative uptake yields $50 M + annually. [5]

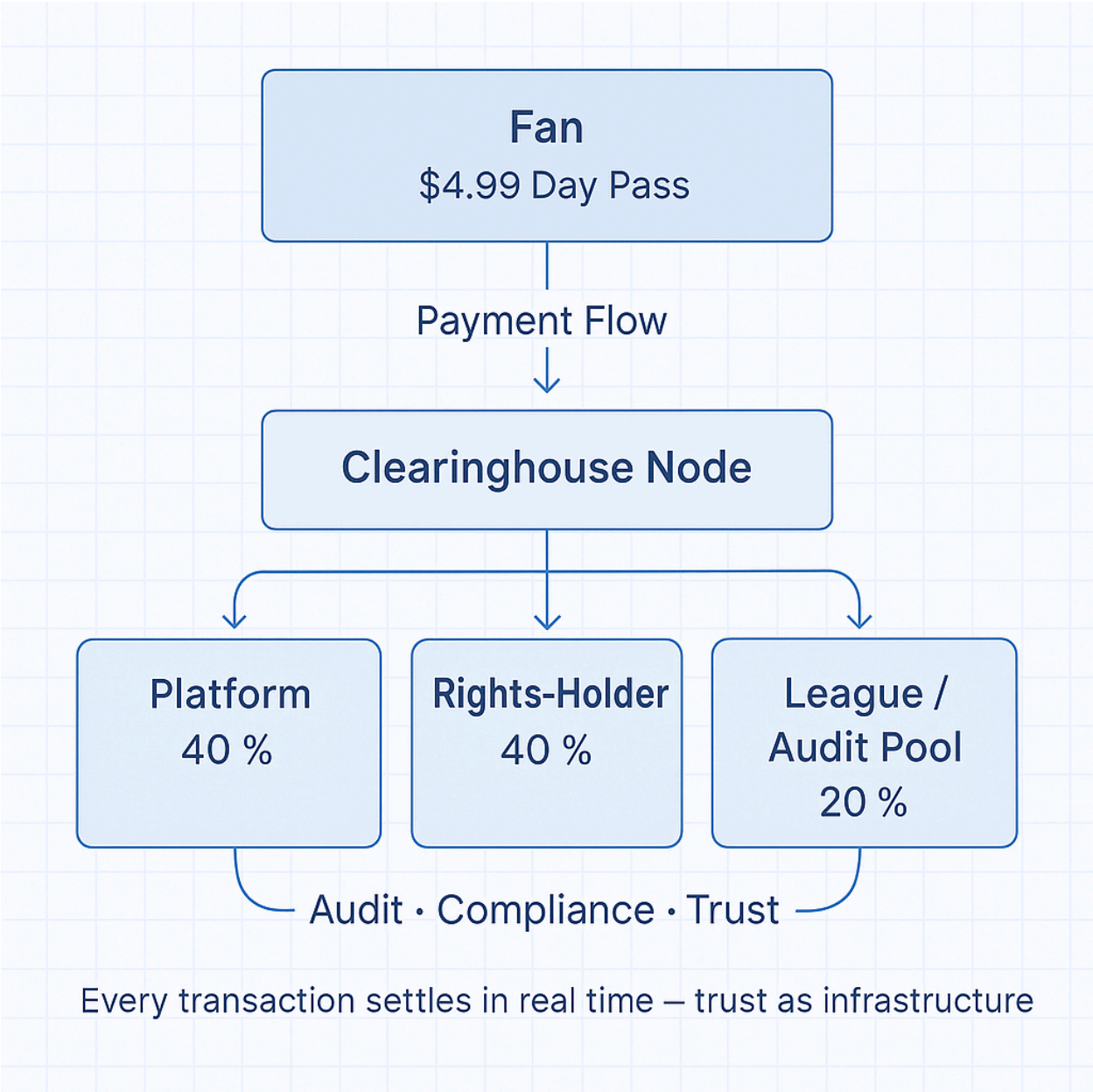

Fig. 2 — Revenue Flow & Settlement (40 / 40 / 20)

2. Revenue Distribution

Stakeholder	Allocation	Function
Platform / Streamer	40 %	Delivery & infrastructure
Rights-Holder / Broadcaster	40 %	Content & production
League / Clearinghouse	20 %	Governance & analytics

3. Incremental ARPU Impact

Segment	Traditional Model	With USG Layer
Core Subscribers	$6.99–$14.99 / mo	unchanged
Casual Viewers	$0	$4.99 per event
Global Fans	minimal	scalable

Estimated industry-wide upside: **$2–3 B / year**, with negligible content cost increase.

Table 2 – Revenue Sensitivity (Illustrative)

League Size (Games)	Casual Base (M)	Conversion	Buyers/Event	Revenue/Event	Est. Annual ($4.99)
1,000	10	1 %	100,000	$499,000	≈ $499 M
1,000	10	5 %	500,000	$2,495,000	≈ $2.5 B
1,230	8	2 %	160,000	$798,400	≈ $982 M
2,460	12	1 %	120,000	$598,800	≈ $1.47 B

Governance — The Clearinghouse as Infrastructure

The economic scale of modern sports now exceeds that of many national economies. The average NBA franchise is valued at **$5.51 billion**, and the league's 30 teams collectively represent more than **$165 billion in asset value**. The **Golden State Warriors** top the list at **$11.33 billion**, while even the smallest market teams approach **$4 billion** valuations.[6]

These valuations signal a structural transition: leagues are no longer merely governing competitions—they are managing sovereign-sized capital networks. The Universal Sports Graph's compliance and audit framework addresses this gap by introducing transparent, protocol-level governance for an industry that has outgrown private contractual oversight.

A **league-run or consortium-governed clearinghouse** ensures neutrality and compliance.

The Universal Sports Graph's compliance layer aligns with the OECD's digital-transformation framework, which defines interoperability, privacy, and trust as prerequisites for sustainable public infrastructure.[7]"

Core Functions

- Rights Registry Oversight
- Transaction Reconciliation
- Data Stewardship
- Standards Maintenance

Governance Structure

Stakeholder	Role	Voting Share
Leagues / Federations	Rights & policy	40 %
Platforms / Networks	Distribution	30 %
Independent Trustees	Ethics & consumer voice	20 %
Audit Cooperative	Compliance	10 %

Voting shares and compliance relationships are visualized in *(Fig. 3 — Governance Map)*.

Compliance & Auditability

- Immutable settlement logs
- Third-party audits
- Built-in GDPR/CCPA alignment
- Regulatory sandbox for pilots

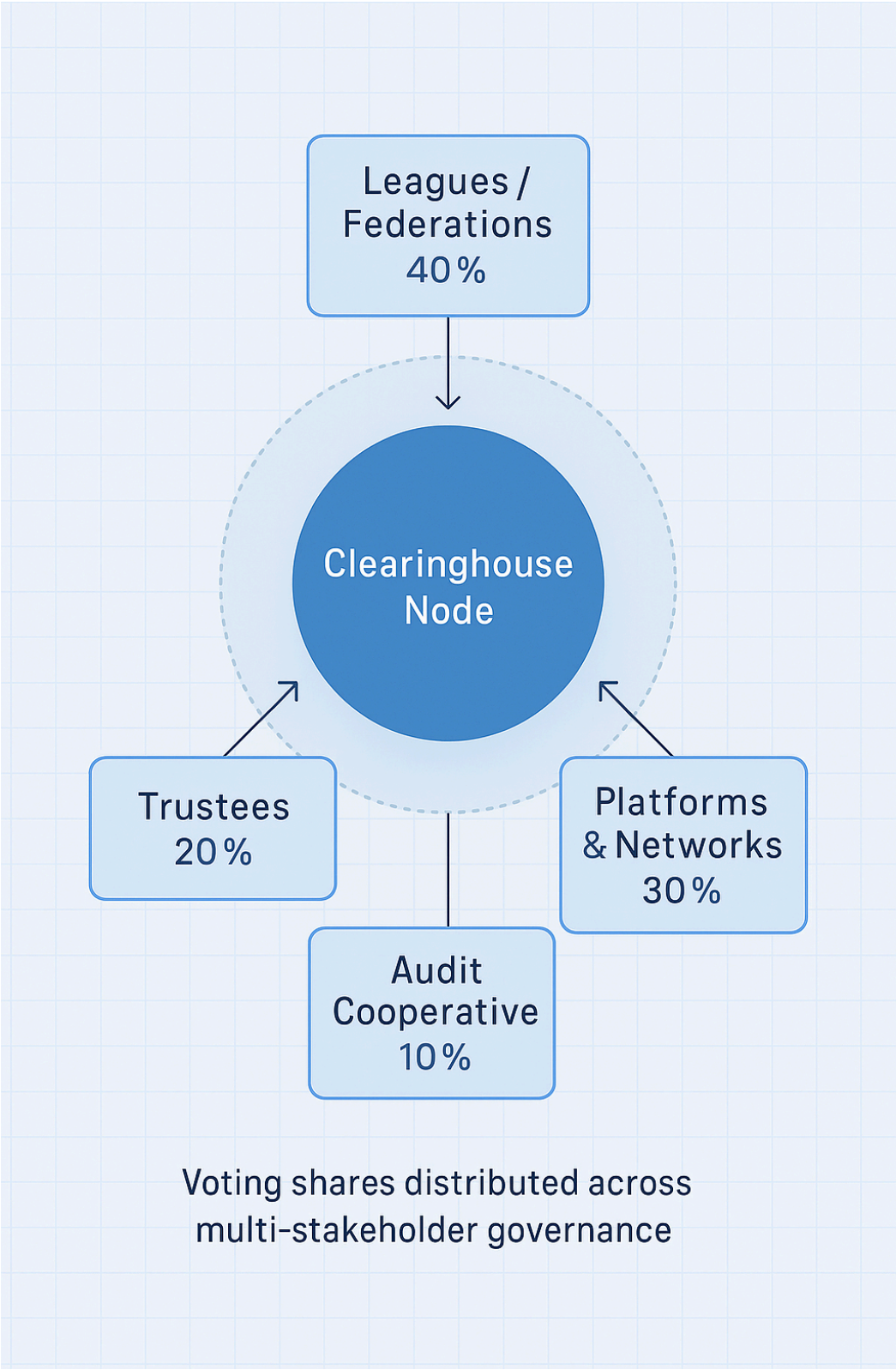

Fig. 3 — Governance & Clearinghouse Map

This governance and logging model aligns with modern interoperability and data-portability regimes (e.g., GDPR, CCPA) and can operate within regulator-approved sandboxes.

Principle: *The Graph is not a platform to own sports; it is a protocol to connect them.*

Principle of Neutrality

The Universal Sports Graph operates as a neutral standard. No single entity controls access, ownership, or data flow. Governance, auditing, and standards maintenance are distributed across leagues, platforms, and independent trustees *(see Fig. 3 — Governance Map).*

Audit Trail Stack

- Immutable settlement log (append-only, block-hashed).
- Versioned **rights/entitlement schema registry** (ISO-style).
- Third-party audit hooks and exportable evidence bundles for compliance testing.
- Regulator-ready data portability under GDPR / CCPA alignment.

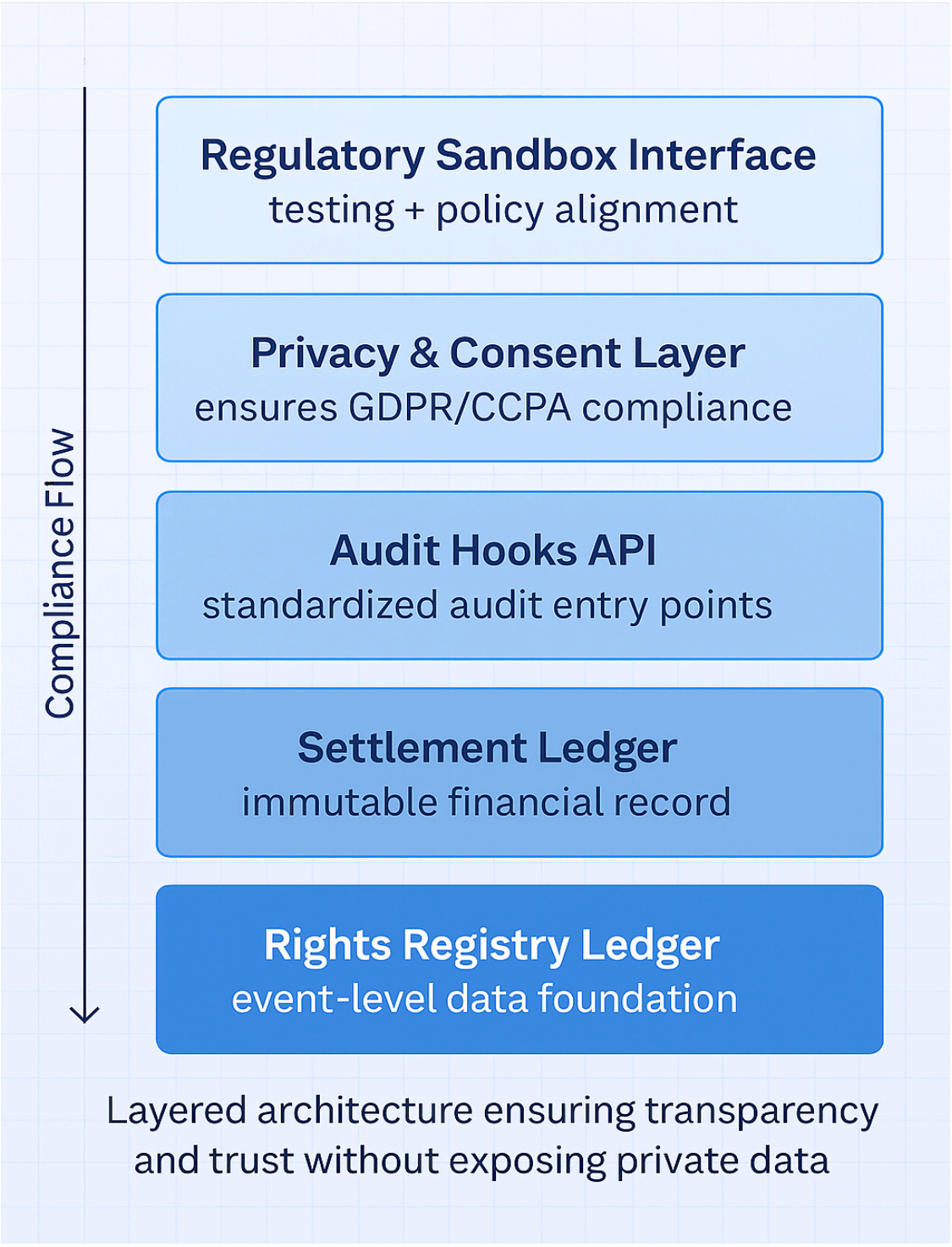

Fig. 4 — Compliance / Audit Stack

Note — USG standardizes access and settlement layers only; it does not modify participation equity obligations such as Title IX compliance.

Security & Privacy Considerations

The Universal Sports Graph transacts *entitlements*, not streams. The Access API issues scoped, time-limited tokens that authorize viewing without exposing personal data to counterparties. All transactions are recorded in an append-only, block-hashed ledger to preserve integrity and provide a verifiable audit trail. Settlement evidence can be exported for independent review without revealing fan identities.

Implementations separate analytics from access control, ensuring that performance metrics and audience insights remain consent-based. Identity portability, when enabled, is always explicit, revocable, and governed by user permission. Encryption and token-signing keys are rotated on a fixed schedule to maintain security hygiene.

The protocol aligns with global privacy and data-portability frameworks such as GDPR and CCPA, and can operate within regulator-approved sandbox environments. Together, these safeguards ensure that interoperability enhances trust rather than compromises it.

(see Fig. 4 — Compliance / Audit Stack)

Sidebar — Critics Will Say

Critics Will Say:
"No league will ever share its data."

Response:
The Universal Sports Graph shares *entitlements, not streams*. Rights metadata — not raw content or PII — flows through the protocol.

Each transaction exposes only what's necessary for access and settlement, not internal analytics or competitive data. Fan identity remains portable *only under explicit consent*, and each entitlement token carries its own scoped permissions.

The clearinghouse logs are *auditable but not readable* — ensuring transparency without surveillance.

In short: control stays with leagues; interoperability happens at the metadata and token layers, not the content layer.

Impact — Re-Aligning Value Across the Ecosystem

Fans

Unified discovery, transparent pricing, and portable access → broader reach and reduced piracy.

Leagues

Regain fan-data visibility, monetize casual viewers, ensure continuity across partners and regain a portable fan identity layer (tokenized or wallet-backed) that persists across platforms with explicit consent.

Platforms

New micro-revenue stream, lower churn, improved regulatory optics.

Investors

Rights become data-rich, financeable assets; foundation for new market indices.

Regulators

Prototype for voluntary digital-public-infrastructure standards.

Aggregate Effect:
Sports become the first domain where interoperability precedes regulation — a working model of *Humanity-First Platform Design.*

Value recirculates among all actors as illustrated in *(Fig. 5* — Stakeholder Value Loop*).*

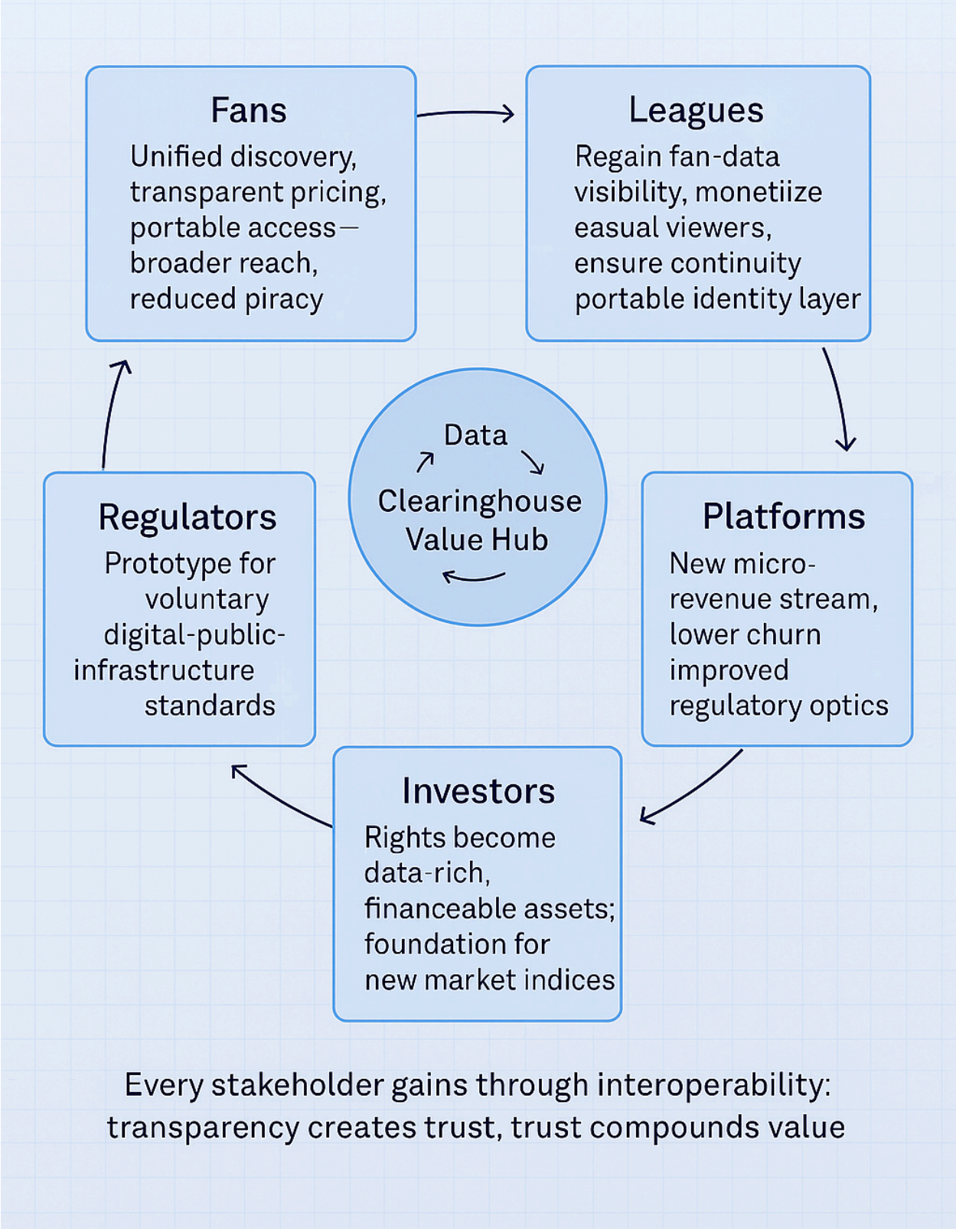

Fig. 5 — Stakeholder Value Loop

Table 3 — Stakeholder Benefits Matrix

Stakeholder	Economic Benefit	Operational Benefit	Data/Policy Benefit
Fans	Transparent per-game pricing ($4.99) reduces overpay + churn	One-tap “Watch / Day Pass” across apps	Portable entitlements + consented identity; fewer blackouts
Leagues/Federations	New revenue from casual viewers; incremental ARPU	Continuity across partners; unified rule set for access	Fan visibility via scoped tokens; regulator-friendly audit trail
Platforms/Networks	Micro-revenue without subscription cannibalization	Standardized checkout/auth; lower acquisition friction	Improved regulatory optics; clean separation of PII/stream
Rights-Holders/Broadcasters	Monetize tail inventory; predictable settlement	Less bespoke integration; faster game-level offers	Rights expressed as data; evidence bundles for audits
Investors/Capital	Data-rich, financeable rights; index potential	Clearer unit economics at event level	Standardized disclosures; comparable metrics
Regulators/Public	Voluntary interop model; consumer protection	Sandboxable; faster compliance checks	Built-in portability, logging, and third-party audit hooks

Table 3 — Stakeholder Benefits Matrix. Summary of primary value across Fans, Leagues, Platforms, Rights-Holders, Investors, and Regulators.

Figure Reference → See Fig. 5 — Stakeholder Value Loop.

Roadmap — From Pilot to Protocol

Phase 1 – Pilot (Year 1)

- Partner: one mid-tier league + one streamer.
- Deliverables: rights schema, Access API, sandbox clearinghouse.
- Metric: 5–10 % conversion of non-subscribers.

Phase 2 – Consortium (Years 2–3)

- 3–5 leagues form an interoperability consortium.
- Publish Graph v1.0 spec; establish clearinghouse charter.
- Metric: > 500 events indexed; 24-hour settlement.

Phase 3 – Industry Standard (Years 3–5)

- Major leagues + global streamers onboard.
- Graph compliance in contracts & SDKs.
- Metric: 70 % of top leagues publishing via Graph.

Phase 4 – Global Interop (5 + Years)

- International Sports Access Council under OECD/ITU.
- Multi-currency, multi-language Graph.
- Recognized as *“DNS of Sports Access.”*

*Key deliverables and success indicators for each phase are summarized in **Table 4 — Implementation Matrix v1.0**, which aligns directly with the four-phase roadmap illustrated in **Fig. 6 — Adoption Roadmap**.*

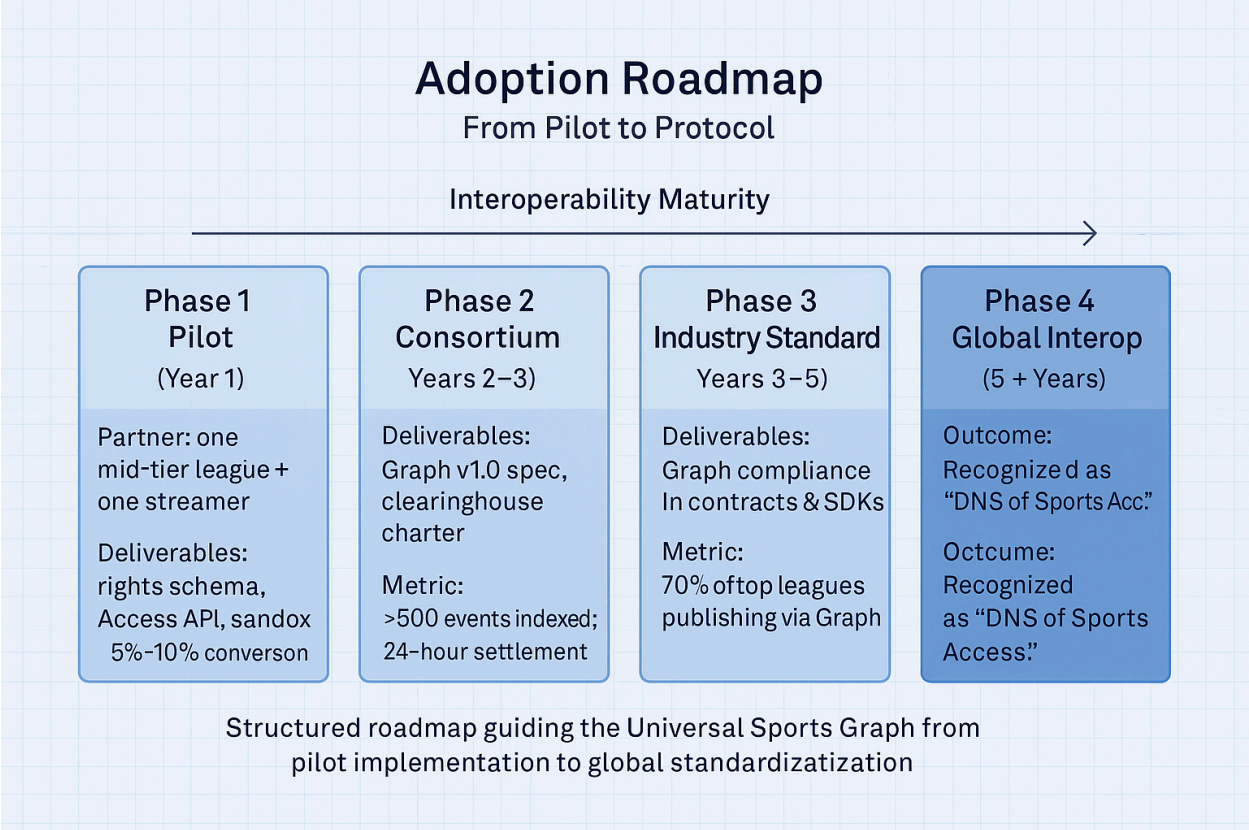

Fig. 6 — Adoption Roadmap

Key deliverables and success indicators for each phase are summarized in Table 4 — Implementation Matrix v1.0, which aligns directly with the four-phase roadmap outlined above.

Table 4 — Implementation Matrix v1.0

The following **Implementation Matrix v1.0** summarizes the milestones required to move the Universal Sports Graph from concept to pilot-ready infrastructure. Each component corresponds to a discrete deliverable aligned with the four Roadmap phases.

Component	Objective	Readiness Indicator
Rights Schema v0.1	Define standardized metadata for event, territory, and entitlement structure.	Schema published and validated across ≥2 leagues.
Access & Authentication API Stub	Enable tokenized, per-event access and single-click checkout.	Live demo or sandbox endpoint operational.
Clearinghouse Charter	Establish governance model and settlement rules (40 / 40 / 20 split).	Draft charter ratified by initial consortium members.
Audit & Compliance Stack	Implement immutable logs, audit hooks, and sandbox alignment with GDPR/CCPA.	Verified test audit under simulated conditions.
Pilot Metric Dashboard	Measure conversion, ARPU, and settlement latency for first 1,000 transactions.	24-hour settlement achieved; 5–10 % conversion of non-subscribers.
Public Sandbox Release	Provide open, regulator-aligned environment for further testing and adoption.	Public API documentation and registry access available.

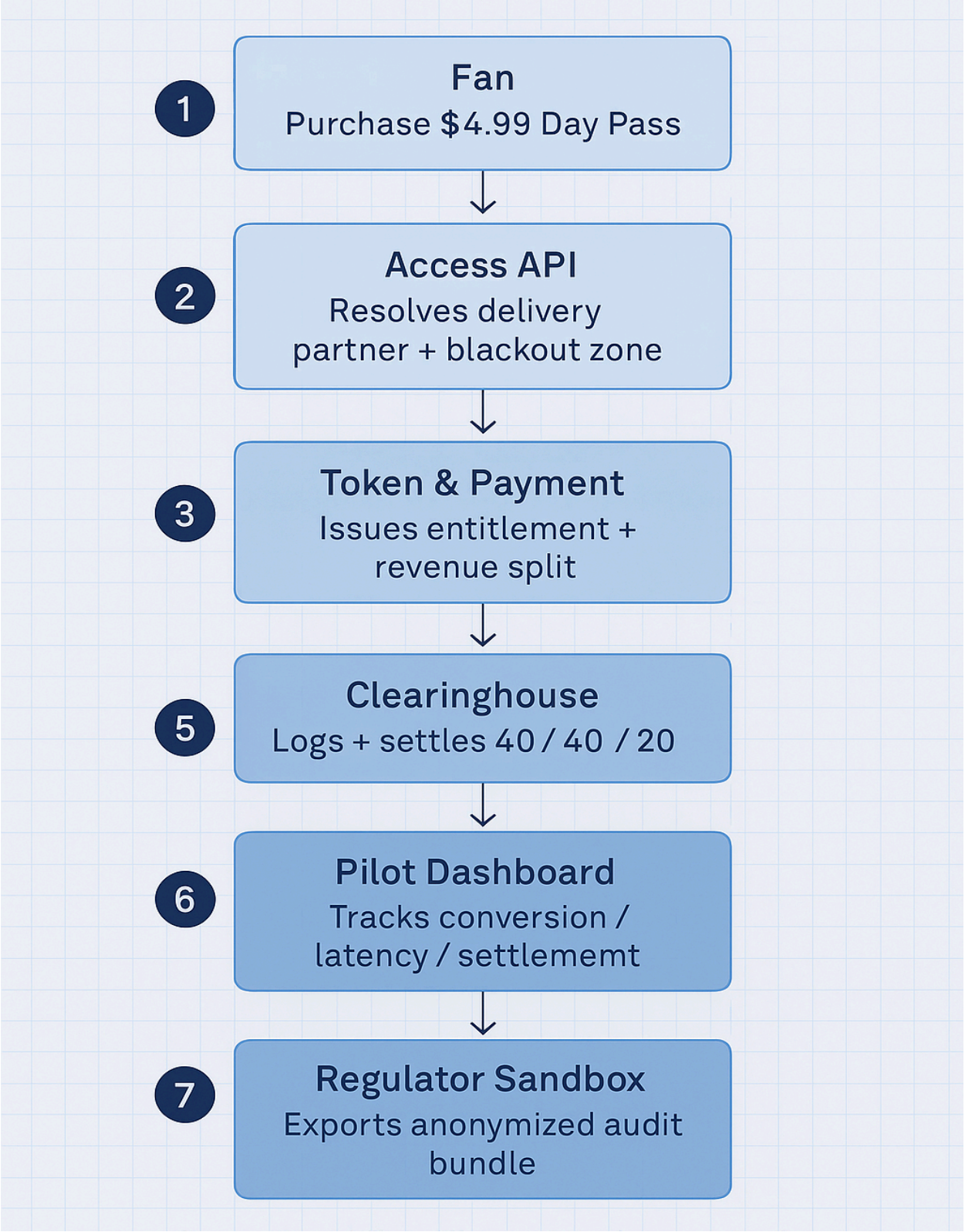

Fig. 7 — Pilot Stack Diagram

Conclusion — Access as Infrastructure

Sports connect billions, yet their digital delivery remains fractured.
The Universal Sports Graph reframes access as a missing layer of infrastructure — not another platform, but a standard.
By treating every broadcast right as structured data, the Graph restores transparency, expands reach, and aligns incentives across the ecosystem.

If realized, it would be the first *Humanity-First Platform* to emerge from sport — privately governed, publicly beneficial, and quietly universal.
Its true success will be its invisibility: a protocol powering how billions connect to what they love.
The future of sports distribution is not an app.
It is a **standard**.

Closing Note — Blueprint Edition v1.0

This Blueprint Edition completes the foundational specification of the Universal Sports Graph. It is released as an open, non-proprietary protocol blueprint intended for consortium pilots, regulator sandboxes, and standards-development review. Feedback is welcomed on interoperability surfaces (schema and entitlement token format), clearinghouse governance, and audit evidence bundles. The Graph is neutral infrastructure — it connects existing platforms rather than replacing them.

Metadata Block

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References & Further Reading

References 1–8 include both *normative* and *informative* sources as used in standards documentation. Normative references define interoperability or compliance frameworks directly relevant to the protocol; informative references provide supporting market or policy context.

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Appendix A — Reference Implementation Stub

All examples in this appendix are illustrative and non-normative. All credentials, tokens, and identifiers are fictitious and included solely to demonstrate interoperability format and schema structure.

Like other open internet standards (e.g., IETF RFC 3986), the Universal Sports Graph defines each event entitlement as an addressable resource that can be resolved, authenticated, and exchanged programmatically.[8]

(Illustrative only — for standards discussion and sandbox testing)

A1. Minimal Event Schema (JSON)

```
{
  "event_id": "nba_2025_gsw_lal_0410",
  "league": "NBA",
  "home": "Warriors",
  "away": "Lakers",
  "start_time": "2025-04-10T19:30Z",
  "territory": ["US","CA"],
  "rights_holder": "NBA Media",
  "delivery_partner": "YouTubeTV",
  "price_usd": 4.99,
  "access_window": {
    "start": "2025-04-10T19:00Z",
    "end": "2025-04-10T23:59Z"
  },
  "settlement_split": {"platform":40,"rights":40,"clearinghouse":20}
}
```

A2. Example /entitlements/issue Request

POST /entitlements/issue

Content-Type: application/json

Body: `{ "event_id": "nba_2025_gsw_lal_0410", "user_id": "wallet_8234", "payment_token": "txn_5567" }`

A3. Example Response

```
{ "entitlement_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...",
"expires": "2025-04-10T23:59Z" }
```

A4. Sample Settlement Record

```
{
  "txn_id": "txn_5567",
  "event_id": "nba_2025_gsw_lal_0410",
  "amount_usd": 4.99,
  "split": {"platform":1.996,"rights":1.996,"clearinghouse":0.998},
  "timestamp": "2025-04-10T19:31Z",
  "ledger_hash": "0000abcd..."
}
```

All JSON examples are illustrative only and non-normative; field names and values are for demonstration of interoperability format.