Domain 1: Talent & User Management

Source: SRS Section 3.1.1 (F-001, F-002, F-003)

1. Entity: PlayerProfile
- **Data Schema:**
    - id: UUIDv4 (Globally Unique) [1]
    - attributes: Age (Integer), Height (cm), Position (Enum) [2]
    - sensitiveData: Contact Details, Address (Encrypted) [3]
    - version: Integer (Current Version ID) [4]
    - lastVerified: DateTime

- **Invariant Rules:**
    - **Age Constraint:** Must be strictly 13–40 years old[5].
    - **Physique Constraint:** Height must be 140cm–220cm[6].
    - **Modification Lock:** Sensitive fields require a "Dual-Approval" flag before committing[7].
- **Security & Compliance:**
    - **Class:** Restricted PII[8].
    - **Retention:** 7 years after last activity[9].
    - **Encryption:** AES-256-GCM at rest[10].
    - 2. Entity: ScoutUser
    - - Data Schema:
    -   - identity: Email, Phone Number
    -   - professionalCreds: Business Email, LinkedIn Profile URL
    -   - verificationStatus: Enum (Pending, Verified) # Simplified per PRD US 1.2
    -   - sessionState: LastActiveTime, ConcurrentSessionCount
    - - Invariant Rules:
    -   - Verification Logic: Verified status requires manual admin approval (PRD AC1.2.2-1.2.3)
    -   - Session Limit: Max 3 concurrent sessions allowed
    -   - Timeout: Session invalid after 30 minutes of inactivity (PRD AC1.2.5)

2. Entity: ScoutUser

- Data Schema:

  - - identity: Email, Phone Number
  - - professionalCreds: Business Email, LinkedIn Profile URL
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- Invariant Rules:

  - - Verification Logic: Verified status requires manual admin approval (PRD AC1.2.2-1.2.3)
  - - Session Limit: Max 3 concurrent sessions allowed
  - - Timeout: Session invalid after 30 minutes of inactivity (PRD AC1.2.5)

3. Entity: TalentDossier (Export Artifact)

- **Data Schema:**

  - documentId: Unique Hash [18]
  - content: Binary Blob (PDF)
  - metadata: GenerationTimestamp, RequestorID, WatermarkHash [19]

- **Invariant Rules:**

  - **Generation:** Must be generated server-side (no client-side data compilation)[20].
  - **Watermarking:** Every page must embed the Requestor ID[21].

Domain 2: Content & Media

Source: SRS Section 3.1.2 (F-004, F-005, F-006)

4. Entity: EditorialContent

- **Data Schema:**

  - id: Unique Content ID
  - status: Enum (Draft, Review, Published, Archived)[22]
  - accessLevel: Enum (Public, ProView)[23]
  - versionHistory: Array of last 10 snapshots[24]

- **Invariant Rules:**

  - **Atomic Publish:** A publish action cannot be partial; it is binary[25].

- ○ **Sharing Constraint:** If accessLevel is ProView, public sharing is disabled[26].

5. Entity: MediaAsset

- **Data Schema:**
  - ○ fileRef: Storage Path (S3/Blob)
  - ○ format: MimeType (Optimized)[27]
  - ○ rights: DRM Flags (Watermarked)[28]
- **Invariant Rules:**
  - ○ **Optimization:** Assets must be auto-converted to web-optimized formats on ingest[29].
  - ○ **Storage Limit:** Max 10GB per user[30].

6. Entity: SportsDataFeed

- **Data Schema:**
  - ○ sourceId: External Provider ID [31]
  - ○ payload: JSON/XML/CSV Raw Data [32]
  - ○ ingestTimestamp: DateTime [33]
  - ○ stalenessStatus: Boolean [34]
- **Invariant Rules:**
  - ○ Staleness:- Staleness Logic: [Out of Scope for MVP – Future Enhancement]
  - ○ - Note: MVP uses manual league/fixture management per PRD US 2.2

Domain 3: Advertising & Finance

Source: SRS Section 3.1.3 (F-007, F-008, F-009)

7. Entity: AdCampaign

- Data Schema:

  - ○ - campaignState: Enum (Draft, Pending Review, Approved, Active, Paused, Completed, Archived)
  - ○ - financials: DailyCap, LifetimeCap, PerViewRate # Simplified pricing (PRD AC4.2.5)
  - ○ - creative: FileAttributes (Dimensions, Size, ColorProfile)
  - ○ - metrics: DeliveredViews, PurchasedViews # Added for clarity

- Invariant Rules:

- - Pricing Model: TotalCost = PurchasedViews × PerViewRate (PRD AC4.2.5)
- - Transition Lock: Cannot move to Active without passing Approved state
- - Budget Sync: DeliveredViews must not exceed PurchasedViews (PRD AC6.4.2)

8. Entity: PaymentTransaction
- **Data Schema:**
  - transactionId: Unique ID
  - amount: Decimal (Multi-currency: USD, EUR, GBP, NGN) [42]
  - taxDetails: VAT/GST Calculation [43]
  - token: Payment Gateway Token (No Card Numbers) [44]
- **Invariant Rules:**
  - **PCI Constraint:** Must NEVER store PAN (Primary Account Number) or CVV[45].
  - **Retention:** Financial records retained for 10 years[46].

9. Entity: AdImpression
- **Data Schema:**
  - eventId: Unique ID
  - validity: Boolean [47]
  - duration: Milliseconds [48]
  - fraudScore: Float (Bot Probability) [49]
- **Invariant Rules:**
  - **Validity Threshold:** Valid only if loaded + in-viewport + duration $\ge$ 1 second[50].

Domain 4: Security & Compliance (System Entities)
Source: SRS Section 3.2.3, 3.3 (NF-005, C-001, C-003)

10. Entity: AccessLog
- **Data Schema:**
  - traceId: Correlation ID

- ○ actor: IP Address, User Agent, User ID [51]
- ○ resource: Resource Accessed [52]
- ○ timestamp: UTC DateTime [53]
- **Invariant Rules:**
  - ○ **Immutability:** Once written, record cannot be modified (WORM storage)[54].
  - ○ **Retention:** Minimum 2 years[55].

11. Entity: ConsentRecord
- **Data Schema:**
  - ○ subjectId: User ID
  - ○ scope: Consent Scope (Marketing, Analytics) [56]
  - ○ status: Enum (Granted, Revoked) [57]
  - ○ timestamp: Action Time [58]
- **Invariant Rules:**
  - ○ **Revocability:** A user must always be able to change status to Revoked[59].

12. Entity: AuditEntry (System-Wide)
- **Data Schema:**
  - ○ changeId: Unique ID
  - ○ targetEntity: Reference (e.g., PlayerProfile ID) [60]
  - ○ delta: JSON Diff (BeforeValue vs AfterValue) [61]
  - ○ actorId: User ID performing change [62]
- **Invariant Rules:**
  - ○ **Completeness:** Must capture 100% of security-relevant events[63].