KRYSTAL: UI Site Map and System Flows

This document describes the structure of the user interface (UI) screens and key interaction flows within the KRYSTAL platform, for both Talent and Business users.

1. Site Map (UI Screens)

A. General Access Screens

1. Main Landing Page (`/`):
    - Purpose: Platform presentation calls to action for registration/login, general information.
2. Registration Page (`/register`):
    - Purpose: Create a new account.
    - Key Elements: Registration form (email, password, user type: Talent/Business).
3. Login Page (`/login`):
    - Purpose: Access an existing account.
    - Key Elements: Login form (email, password).

B. For Talent Users

1. Talent Home/Dashboard Page (`/talent/dashboard`):
    - Purpose: Overview of their profile, visibility status, basic portfolio statistics, notifications.
    - Key Elements: Quick views to "My Profile", "My Portfolio", "Settings".
2. Talent Profile Creation/Editing (`/talent/profile/edit`):
    - Purpose: Detailed screen for talent to enter their information.

- Key Elements:
  - Basic Information: Name, contact details, location, age, gender, languages.
  - Talent Category: (Model, Influencer, Actor, Digital Artist, etc.).
  - Skills/Specialties: List of specific skills (e.g., fashion modeling, skateboarding, voice acting, digital illustration).
  - Preferred Rates and Availability.
  - Biography/Description: Free text field to introduce themselves.

3. Portfolio Management (`/talent/portfolio`):
   - Purpose: Upload, organize, and preview their multimedia assets.
   - Key Elements:
     - Photo Gallery: Upload and display images. Field to add description/comment for each photo.
     - Video Gallery: Upload and display videos. Field to add description/comment for each video.
     - Preview: Preview of how their portfolio will look to businesses.
4. Social Media Integration (`/talent/social-integrations`):
   - Purpose: Connect social media accounts to import metrics.
   - Key Elements: Buttons to connect with Instagram, TikTok, YouTube, etc., and display of imported metrics.
5. Talent Account Settings (`/talent/settings`):
   - Purpose: Manage account details, security, notifications, subscriptions (if applicable in the future).

C. For Business Users

1. Business Home/Dashboard Page (`/business/dashboard`):
   - Purpose: Overview of active projects, drafts, pending suggestions, campaign statistics.
   - Key Elements: Quick views to "Create New Project", "My Projects", "Talent Suggestions".
2. Project Creation/Editing (`/business/project/create` ,

`/business/project/:id/edit`):

- Purpose: Detailed screen for the business to define their campaign.
- Key Elements:
  - Project Title and Description: Free text field for the creative brief.
  - Campaign Type: (Product launch, Brand content, Awareness campaign).
  - Industry Sector.
  - Budget and Deadlines.
  - Target Audience: Demographics, interests.
  - Talent Requirements: Type of talent (model, influencer), specific skills, physical attributes, desired location.
  - Desired Style and Tone: Textual description of the visual style and campaign tone.
  - Examples/Reference Files: Uploading images/videos for visual reference.

3. Talent Suggestions (`/business/project/:id/suggestions`):
   - Purpose: Display the list of AI-suggested talent for a specific project. This is where the "highly accurate suggestions" of the system manifest.
   - Key Elements:
     - Talent List: Talent cards with main photo, name, category, a brief summary of why they are a good match (based on AI Agent analysis), and a percentage score indicating the level of similarity/matching.
     - Filters and Sorting: Options to refine the list (e.g., by followers, by age).
     - Actions: Button to "View Full Profile" or "Contact".
4. Talent Profile Viewing for Businesses (`/business/talent/:id`):
   - Purpose: Present the full profile of a specific talent to the business.
   - Key Elements:
     - Detailed profile information, biography.
     - Full portfolio of photos and videos (with their

descriptions/comments).
    - Relevant social media metrics.
    - Project history (if applicable).
    - Display of the overall similarity/matching percentage for the viewed talent in relation to the specific project.
    - "Contact Talent" Button: To initiate communication (e.g., via internal messaging, or generate a contact email).
5. My Projects (`/business/projects`):
    - Purpose: List of all projects created by the business, with their status.
6. Business Account Settings (`/business/settings`):
    - Purpose: Manage company data, security, notifications, billing.

D. For Administrator Users (internal)

1. Admin Dashboard (`/admin/dashboard`):
    - Purpose: Overview of platform health (user count, projects, activity, key metrics).
2. User Management (Talent and Business) (`/admin/users`):
    - Purpose: View, edit, approve/reject (if there's a manual review process), suspend users.
3. Content Management (Profiles/Projects) (`/admin/content`):
    - Purpose: Review and moderate talent profiles and business projects.
4. AI Monitoring and Logs (`/admin/ai-monitor`):
    - Purpose: Monitor AI model performance, view logs of embedding generation and matches. This screen could display information about the activity of internal "AI Agents" (Casting AI Agents, Brand AI Agents) in terms of processing and matching.
5. Platform Settings (`/admin/settings`):
    - Purpose: Global settings, subscription plan management, etc. In future phases, configurations related to "white-labeled AI agents" offers for agencies and businesses with advanced requirements could be managed here.

2. System Flows

A. Access Flow: Registration and Login

1. Access KRYSTAL:
    - The user (Talent or Business) visits the KRYSTAL main page.
    - Clicks "Register" or "Login".
2. Registration:
    - If new: Enters email, password, and selects account type (Talent or Business).
    - System Action: The system (Supabase Auth) creates the account and sends a verification email.
    - Verification: The user verifies their email.
    - Result: Automatic redirection to the Login screen.
3. Login:
    - The user enters their email and password.
    - System Action: Supabase Auth authenticates the user.
    - Result: Redirection to the corresponding Dashboard (Talent or Business).

B. User Flow: Talent

1. Post-Login: Redirection to Talent Dashboard.
2. Profile Creation and Management:
    - From the Dashboard, Talent navigates to "My Profile".
    - Step 1: Basic Information: Fills in text fields (biography, skills, rates, etc.).
    - Step 2: Multimedia Portfolio: Uploads photos and videos.
        - User Action: The Talent can add a description or comment to each uploaded photo/video.
        - System Action: Upon upload, the Main Backend (Next.js API Routes) sends files to Supabase Storage. Once in Storage, the Main Backend triggers the AI Microservice (Python) to generate image/video embeddings (using CLIP, FFmpeg).
        - Storage: The Main Backend receives the embeddings and saves

    - them in Supabase DB (`pgvector`) associated with the talent's profile.
  - Step 3: Social Media: Connects accounts to import metrics.
  - Result: Talent profile completed and optimized for AI matchmaking.
3. Profile Maintenance:
  - The Talent can update their information or portfolio at any time.
  - System Action: Any text or multimedia update triggers an embedding regeneration to keep the profile updated for the matching algorithm.

C. User Flow: Business

1. Post-Login: Redirection to Business Dashboard.
2. New Project Creation:
  - From the Dashboard, the Business navigates to "Create New Project".
  - Step 1: Project Data: Fills in text fields (title, description, budget, requirements, etc.).
  - Step 2: Visual References (Optional): Uploads reference images or videos.
    - System Action: Upon saving the project, the Main Backend sends the brief text to the AI and/or visual references to the AI Microservice to generate embeddings (using CLIP).
    - Storage: Project embeddings are saved in Supabase DB (`pgvector`) associated with the project.
  - Result: Project created and ready to receive talent suggestions.
3. Talent Suggestions Review:
  - After creating a project (or from the Dashboard), the Business navigates to "Talent Suggestions" for that project.
  - System Action (AI Matchmaking - AI Agent Operation):
    - A virtual AI Agent, representing the KRYSTAL system, takes the project embedding.
    - Performs a similarity query in Supabase DB (`pgvector`) against all talent embeddings.
    - Applies additional filters (e.g., location, availability) and weighs social

media metrics (followers, engagement).
    - Calculates a percentage similarity score for each talent based on their compatibility with the project.
    - Returns a ranked list of most compatible talents, including their similarity percentage.
  - Business Interaction: The Business reviews the suggested talent cards, can filter or reorder, and clicks to view full profiles.
4. Contacting Talent:
  - From the suggested talent's profile view, the Business clicks "Contact Talent".
  - System Action: A communication channel is initiated (e.g., internal messaging, or a contact email with the talent's contact details is generated, with talent's consent).

D. System Flow: AI Matchmaking Processing (Backend)

This flow is mostly internal to the system, triggered by user actions:

1. Embedding Trigger (Talent and Project):
  - When a Talent saves their profile (biography, skills, photos, videos with descriptions) or a Business saves a project (brief, references), the Main Backend detects new/updated data.
2. Call to AI Microservice:
  - The Main Backend sends the text, URLs of images, and/or URLs of videos (if already in Supabase Storage) to the AI Microservice.
3. Embedding Generation in AI Microservice:
  - The AI Microservice:
    - For Text (Profiles/Projects): Uses CLIP (or Sentence Transformers) to generate the 512 (or 384)-dimensional embedding of the text.
    - For Images (Portfolio): Uses CLIP to generate the 512-dimensional embedding of each image.
    - For Videos (Portfolio): Extracts keyframes with FFmpeg, then uses CLIP for each keyframe and aggregates the embeddings for the full video (e.g., average).

- Optional (Audio): If activated, uses STT to transcribe, then a text embedding model (such as CLIP or Sentence Transformers) for the audio embedding.

4. Embedding Storage:
   - The AI Microservice returns the generated embeddings to the Main Backend.
   - The Main Backend saves these vectors in the `VECTOR(512)` (or `VECTOR(384)`) columns of the `talents` or `projects` tables in Supabase DB.
5. Search and Ranking of Matches (When Business requests suggestions):
   - The Main Backend retrieves the Business project's embedding from Supabase.
   - Executes a SQL query in Supabase DB (`pgvector`) using vector distance operators (`<->` or `<=>`) to find talents whose embeddings are closest to the project's embedding. This is where the intelligence of the "AI Agents" (as mentioned in the PRD and the KRYSTAL document) manifests by orchestrating this search and providing curated results.
   - Initial results are ordered by similarity.
   - Additional filtering criteria (location, availability, etc.) are applied, and the ranking is adjusted using social media metrics and other business weights.
   - A percentage similarity score is calculated for each talent based on the vector distance (e.g., converting cosine similarity to a 0-100% scale).
   - The final list of suggested talents, including their calculated similarity percentage, is sent to the Business Frontend.