TALK BETA – FUNCTIONAL REQUIREMENTS DOCUMENT (FRD)

AUTHOR VICTOR RICHARD ADEKANLE

VERSION HISTORY				
VERSION	**APPROVED BY**	**REVISION DATE**	**DESCRIPTION OF CHANGE**	**AUTHOR**

1.0 **INTRODUCTION** **3**

1.1 Purpose 3

2.0 BUSINESS REQUIREMENTS OVERVIEW **3**

3.0 FUNCTIONAL REQUIREMENTS AND USER IMPACTS **5**

3.1 Usability Requirements 6

3.2 Performance Requirements 7

3.3 Supportability Requirements 8

3.4 Security Requirements 9

3.5 Interface Requirements 10

3.6 Assumptions / Constraints ..... **Error! Bookmark not defined.**

4.0 COMPLIANCE REQUIREMENTS **13**

4.1 Assumptions / Constraints 13

INTRODUCTION

1.1 Purpose

The purpose of this Functional Requirements Document (FRD) is to formally define the functional capabilities of Talk Beta, an AI-powered platform designed to improve communication skills. Talk Beta provides affordable, personalized feedback to help users including content creators, job seekers, and learners enhance their speaking delivery, confidence, and overall effectiveness.

This document establishes:

- A comprehensive description of the required system functionalities, including speech recording, transcription, AI-driven analysis, feedback reporting, and subscription management.
- A clear and common reference point for all stakeholders, ensuring alignment between the product team, developers, management, and quality assurance.
- Measurable acceptance criteria that guide design, development, testing, and deployment activities.
- A formal baseline for scope management and future enhancements, reducing ambiguity and mitigating the risk of scope creep.

By articulating these requirements, the FRD provides the foundation for the successful implementation and scaling of Talk Beta as a reliable, accessible, and impactful communication improvement solution.

2.0 BUSINESS REQUIREMENTS OVERVIEW

Talk Beta addresses the global need for accessible and effective communication training by overcoming the high cost, limited scalability, and lack of personalization in existing solutions. The platform delivers affordable, AI-driven feedback and growth plans, supports diverse user groups (creators, job seekers, learners, enterprises), and differentiates itself through affordability, real-time insights, and measurable progress tracking. Strategically, Talk Beta drives subscription-based revenue, enables enterprise expansion, and aligns with key UN Sustainable Development Goals (SDGs 4, 8, and 10).

2.1 Assumptions and Constraints

Business Requirement	Assumptions	Constraints
Accessibility & Cost Efficiency	Users are price-sensitive and willing to adopt a subscription-based platform. Funding will cover initial product development.	Limited budget ($40K) restricts feature depth and marketing at launch. Pricing must remain competitive
Personalized, Scalable Learning	AI feedback engines (AssemblyAI, Supabase) remain reliable and accurate. Users will accept automated feedback as credible.	Dependency on third-party APIs may create risks in uptime, cost fluctuations, or accuracy limits. Scaling requires additional infrastructure investment.
Market Responsiveness	Demand will continue to grow among content creators, job seekers, and English learners. Internet/device access is sufficient in target markets.	User adoption may be slower in regions with poor connectivity or device limitations. Market entry timelines may delay uptake.
Competitive Differentiation	Affordable pricing, real-time feedback, and analytics will attract users away from traditional coaching.	Competing platforms (apps, workshops, coaching services) may replicate or outperform features.
Strategic Alignment	Alignment with SDGs will strengthen investor and institutional appeal. Expansion into enterprise/education markets is viable by Year 4.	Regulatory compliance (e.g., GDPR) may slow enterprise rollout. Limited resources may delay scaling into enterprise/education sectors.

3.0 FUNCTIONAL REQUIREMENTS AND USER IMPACT

Functional Requirement	How Requirement Satisfies User Needs	User Impact
User Authentication & Profiles	Secure login and personalized profiles allow users to track their practice history and preferences.	Users feel ownership of their progress and can return to tailored sessions.
Audio Recording & Playback	Enables users to practice speaking in real-time and listen to themselves.	Increases self-awareness of delivery, pacing, and confidence
Speech-to-Text Transcription	Converts speech into accurate text for review and error detection.	Users can clearly see patterns in filler words, mispronunciations, and pacing.
Instant AI Feedback (fluency, pacing, pronunciation, filler words, confidence score)	Provides immediate, actionable insights after each session.	Users improve faster with personalized, affordable feedback (vs costly coaching).
Personalized Growth Plans	Tailored recommendations guide users on step-by-step improvement.	Users receive a roadmap for progress instead of generic feedback
Progress Dashboard & Analytics	Visual metrics track performance over time filler word reduction, pacing improvement)	Users stay motivated by seeing measurable improvements in confidence scores.
Live Coaching Simulations	AI simulates interviews, keynotes, and presentations.	Job seekers and creators gain real-world practice in a safe environment

3.1 Usability Requirements

Category	Requirement	Acceptance Criteria
Ease of Learning	New users must understand and use core functions (record, playback, feedback) within 5 minutes.	User onboarding flow tested with sample group; ≥90% complete first task in <5 minutes.
Task Efficiency	Key actions (record, review, dashboard) must be achievable in ≤3 clicks.	Task completion tested across flows; no core task exceeds 3 clicks.
Ease of Use	Navigation must remain consistent across web	User tests confirm identical menu structures and navigation patterns.
Appearance & Design	UI must follow modern, minimalist principles (React + shadcn/ui). Dashboard must display visual progress indicators (charts, scores, trends).	Design review confirms adherence to style guide. Users can view ≥3 visual metrics on dashboard
Consistency	Buttons, icons, and feedback messages must remain uniform across modules. Feedback outputs must use a consistent scoring scale**.**	Fluency, pacing, pronunciation, confidence all scored on same numeric scale.

3.2 Performance Requirements

Category	Requirement	Acceptance Criteria / Measurement
Scalability	The MVP shall support **10,000 concurrent users**, with the ability to scale to 100,000 concurrent users within 3 years. The system shall support enterprise-level integration (e.g., centralized dashboards, API endpoints).	Load and stress testing confirm stability at defined concurrency levels.
Precision	Speech-to-text transcription shall achieve ≥90% accuracy for clear audio. AI scoring (fluency, pacing, pronunciation, filler words, confidence) shall maintain ±5% consistency across repeated trials.	Test-retest reliability studies confirm results within ±5%.
Speed	Speech-to-text analysis and AI feedback shall be returned within ≤5 seconds for recordings ≤2 minutes	Load testing confirms average processing time ≤5 seconds under normal traffic.
Reliability	All user recordings, feedback, and analytics data shall be stored with redundancy.	No more than 0.1% data loss during storage or transfer tests.
Safety	All user data shall be encrypted.	Security audit confirms encryption compliance.

3.3 Supportability Requirements

.

Category	Requirement	Acceptance Criteria / Measurement
Maintainability	The system shall be modular to allow feature updates (e.g., adding live coaching simulations, progress dashboards) without major redesign.	New features can be deployed without major redesign, consistent with roadmap milestones.
Monitoring & Logging	The system shall monitor and log performance of third-party services (Supabase, FastAPI, AssemblyAI) to ensure reliability.	System alerts generated for service errors or downtime.
Upgradability	The system shall scale from MVP (serving thousands of users) to enterprise and education rollouts by Year 4.	Scaling demonstrated during rollout phases as outlined in roadmap.
Documentation & Training	The system shall provide onboarding materials and guided practice libraries to help users quickly adopt the platform.	Tutorials and speech libraries available within the app at launch
Enterprise Support	The system shall support enterprise integrations (team-based features and centralized management) by Year 4.	Enterprise-ready features delivered per roadmap milesto

3.4 Security Requirements

Category	**Requirement**	**Acceptance Criteria / Measurement**
User Data Protection	The system shall ensure secure storage and handling of user recordings, transcripts, and feedback data.	User data is encrypted at rest and in transit using industry-standard methods (as supported by Supabase/AssemblyAI).
Authentication	The system shall provide secure login and user account management to protect personal data	User authentication confirmed through Supabase authentication services.
Third-Party Services	The system shall ensure secure communication between backend (FastAPI) and external services (Supabase, AssemblyAI).	API calls validated via secure tokens/keys, consistent with provider requirements.

3.5 Interface Requirements

Category	**Requirement**	**Acceptance Criteria / Measuremen**
Navigation	The system shall provide a persistent navigation bar (web & mobile) with access to: Record/Practice, Feedback/Results, Dashboard, and Profile/Settings. Navigation elements shall remain in consistent locations (top bar or side panel) across all modules.	≥90% of test users can locate and access each core function without assistance.
Functionality	The Record button shall be prominently displayed on the home screen for one-click access to practice. Playback, transcription, and AI feedback shall be available immediately after recording.	First-time users initiate recording in ≤1 click.
Location of Interface Elements	The Dashboard shall display analytics (fluency, pacing, filler words, confidence score) in labeled charts/visuals. A Library of Practice Speeches/Prompts shall be located in a dedicated section accessible from the main menu.	Users can browse and select prompts in ≤3 clicks.

Category	**Requirement**	**Acceptance Criteria / Measuremen**
Display	The interface shall follow a clean, minimalist layout consistent with React + shadcn/ui design principles Personalized Growth Plans (Year 3 roadmap) shall appear as a guided panel alongside feedback results. Enterprise Admin Dashboard (Year 4 roadmap) shall display centralized team analytics and management tools.	UI design review confirms adherence to design system. Growth plan panel included in prototype milestone. Admin panel verified in enterprise pilot program.

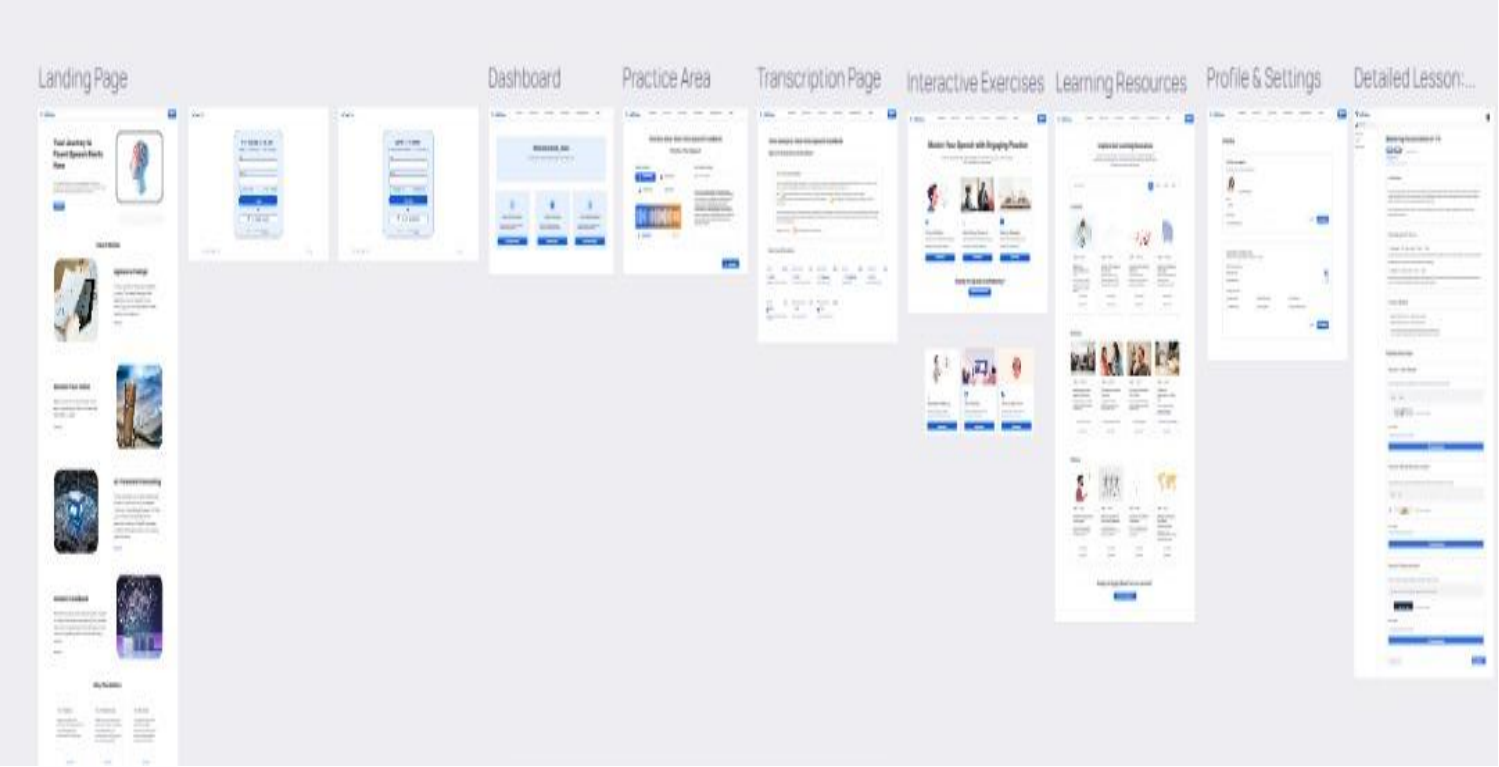

Fig 1.0 Talk Beta Interface

3.6 Assumptions / Constraints

Functional Requirement Area	**Assumptions**	**Assumptions**
Audio Recording & Playback	Users will have access to devices with working microphones and speakers.	Limited by device hardware quality (e.g., low-end devices may reduce clarity).
Speech-to-Text Transcription	AssemblyAI will provide ≥90% transcription accuracy under clear audio conditions.	Accuracy may decrease with accents, background noise, or poor internet.
Instant AI Feedback (fluency, pacing, pronunciation, filler words, confidence score)	Users will accept automated scoring as credible feedback.	Feedback consistency depends on stability of AI models and third-party APIs.
Personalized Growth Plans	Users are willing to follow structured, step-by-step recommendations.	Feature not available in MVP; roadmap milestone is Year 3.
Progress Dashboard & Analytics	Users will engage with visual analytics to track progress over time.	Limited by available metrics in MVP; advanced analytics appear in later phases.
Live Coaching Simulations	Users (job seekers, creators) will value simulated interviews and presentations.	Planned for post-MVP release; depends on additional funding & infrastructure.

4.0 COMPLIANCE REQUIREMENTS

4.1 Assumptions / Constraints.

Compliance Area	Assumptions	Constraints
Data Protection & Privacy	Users and enterprises assume that Talk Beta will handle recordings, transcripts, and analytics securely.	Compliance requirements may vary across regions (e.g., U.S., EU, Africa). Additional legal steps may be needed for enterprise rollout.
Accessibility	The platform is expected to be accessible to global learners, aligning with SDG 4 (Quality Education)	Compliance with accessibility standards (e.g., WCAG) may increase development complexity.
Employment & Training Standards	Organizations adopting Talk Beta assume its outputs will be reliable enough for employability training (SDG 8).	Meeting diverse enterprise compliance frameworks (education, HR, corporate) may require additional certifications.
Inequality Reduction	Talk Beta is assumed to contribute to inclusivity goals (SDG 10).	To be recognized in certain markets, Talk Beta may need compliance with governmental or NGO programs for digital education.