

Software Requirements Specification (SRS) - Call Center Intelligence

1. Introduction

This Software Requirements Specification (SRS) outlines the design and functional requirements for a multi-tenant Call Center Intelligence platform. This platform will serve as Phase 1 of the Banking Channel Management System, focusing on advanced data collection, analytics, dashboards, AI/ML capabilities, transcription, and quality control.

2. Functional Modules

1. Data Ingestion Layer: Collects real-time and batch data from call center interactions.
2. Transcription Module: Converts call audio into text using AI-based models.
3. Sentiment Analysis: Detects caller emotions and categorizes sentiment.
4. Speaker Diarization: Distinguishes between customer and agent in calls.
5. AI Suggestions: Provides real-time prompts and guidance to agents.
6. Quality Control (QC): Monitors compliance, call quality, and agent performance.
7. Dashboards: Custom views for agents, supervisors, and managers.
8. Analytics Engine: Generates insights across tenants, departments, or agents.

3. User Roles

- Agent: Access to calls, transcripts, feedback, and coaching suggestions.
- Supervisor: Team performance, sentiment heatmaps, call issue tracking.
- Manager: Business KPIs, cross-team analytics, alert systems.
- Admin: Setup tenants, manage roles, integration endpoints.

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4. Database Design (Simplified)

Tables:

- Users (UserID, Role, TenantID, Name, Email)
- Calls (CallID, TenantID, StartTime, EndTime, AudioPath, TranscriptID)
- Transcripts (TranscriptID, CallID, Text, Language, DiarizationData)
- Sentiment (SentimentID, CallID, Score, Summary, EmotionScore)
- QualityChecks (QCID, CallID, AgentID, Score, Feedback, Timestamp)
- Dashboards (DashboardID, UserID, LayoutJSON, WidgetsJSON)

5. Technology Stack

- Frontend: ReactJS with TailwindCSS
- Backend: Node.js + FastAPI (Python) for ML Services
- AI Models: Whisper, pyannote-audio, HuggingFace transformers
- DB: PostgreSQL or MySQL
- Deployment: Docker, Kubernetes (Optional)
- Integrations: Azure Cognitive Services / Custom ML APIs

6. Wireframes

The following wireframes illustrate key dashboards and interfaces for agents, supervisors, and managers.

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Dashboard

4	34	7
11 Trns	Notes, Annotations	Node Iterating

Apply filters

Customer	Sentiment	Date
John Doe		8:43
Jane Smith		8:43

Analyze Call

Call Details

#12346	John, Doe	Auto Redial/H Call Triami	8:43
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Transcription

Speaker A

Speaker D

Sortfilter A

QA Scorecard

Supervisor Dashboard

Date	Team	Appl
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Real-Time Call Status

Actona

Bac

Mocative

Gho

8:48

Active Call	10	Negative Calls
Open Interactin	1.5	7%
Negative	2.4	

- Alerts
- Hals clack. Is snroos are cope.
 - Status out quation's lwe persone
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Dashboard

Team	Apply filters
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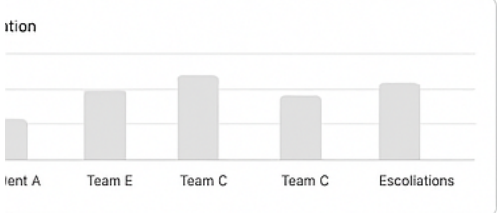
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41%

Overall Semment

Essolutions

58



Performance	Aug Sentiment	QA Score

QA Evaluation

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Greeting	
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QA Scorecard

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Greeting	
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