Project Design Phase II

Solution Requirement

Date	**01 NOVEMBER 2025**
Team ID	NM2025TMID01728
Topic Name	Streamlining Ticket Assignment for efficient support operation

Streamlining Ticket Assignment for Efficient Support Operations

These requirements define what the **AI-driven ticket assignment system** must do, how well it must perform, and the data it needs to operate effectively.

Requirement Type	**S.No.**	**Requirement Description**	**Success Metric / Verification Method**
Functional (What the system does)	**F.1**	The system **must automatically classify** the ticket severity, category, and required skills using Natural Language Processing (NLP) on the ticket description.	Classification Accuracy Rate $\ge$ 90% (verified via UAT and data model testing).
	F.2	The system **must assign the ticket** to the highest-skilled available agent based on the classified required skills (Skill-Based Routing).	**Assignment Accuracy Rate (AAR)** $\ge$ 95%.
	F.3	The system **must utilize real-time agent workload data** to distribute tickets fairly and prevent over-allocation (Load Balancing).	Max workload variance between agents in the same team must be $\le$ 2 active tickets.
	F.4	The system **must provide a configurable fallback mechanism** to automatically route unassigned or misclassified tickets to a designated supervisor queue after 5 minutes.	100% of unassigned tickets route to fallback queue within 5 minutes.

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	F.5	The system **must allow Support Managers to manually override** the automated assignment decision.	Override action must be completed in $\le$ 3 seconds.
Non-Functional (How well the system performs)	**NF.1**	**Performance (Speed):** The system must assign the ticket within **3 seconds** of its creation.	**Ticket First Assignment Time (TFAT)** $\le$ 3 seconds (measured under peak load).
	NF.2	**Reliability:** The assignment service must maintain **99.9% uptime** during operational hours.	Verified by monitoring tool logs and incident reports.
	NF.3	**Scalability:** The system must handle an influx of **up to 1,000 tickets per hour** without performance degradation.	Stress testing reports confirm latency remains within NF.1 threshold.
	NF.4	**Security:** The system must use encrypted connections (HTTPS/TLS) when transmitting agent workload and personal data (e.g., agent ID) between services.	Security audit confirmation and penetration testing results.
Data Requirements	**D.1**	The system requires **historical ticket data (min. 12 months)** for initial training and continuous retraining of the ML classification model.	Data warehouse access must be verified and consistent.
	D.2	The system requires **real-time access to Agent Profile Data** (skills, availability, capacity, certification levels) from the CMDB.	API connectivity status with CMDB must be 100%.