# 🤖 Bot-to-Human Inbox Handoff Logic

## ✅ Module Overview

The Inbox Handoff module is a logic-based escalation layer built on top of the AI Smart Inbox (Messenger, Instagram DM, WhatsApp). It detects when AI responses are insufficient, sensitive, or repeatedly ignored, and automatically escalates to a human staff member. This ensures smooth transitions without losing conversation context or history.

## 🌟 Goals

* Prevent customer frustration due to robotic replies
* Route high-intent or unresolved queries to humans
* Log every escalation with audit trail and timestamps
* Let staff reply inside the same shared inbox view (or via assigned apps)
* Enable hybrid bot-human conversation loops

## 🧪 Core Features

### 1. ✨ Smart Escalation Triggers

* **Rule-based triggers:**
  + User repeats a question 2+ times
  + Keywords like “need help”, “speak to agent”, “wrong order”
  + Any negative sentiment detected via NLP
  + No AI reply sent within 15s
* **Confidence-score trigger:**
  + If the AI reply confidence score is below a set threshold (e.g., 0.7)
* **Manual trigger:**
  + Agent or admin can tag conversation to “Force Handoff”

### 2. 📢 Handoff Notification System

* **Staff Notification Options:**
  + Email
  + WhatsApp internal group
  + Platform dashboard bell icon
* **Payload includes:**
  + Customer name, message history (last 5)
  + Channel (Messenger / IG / WhatsApp)
  + Trigger reason
  + Time since message

### 3. 🛋️ Staff Assignment Engine

* Modes:
  + **Round-robin:** among available agents
  + **Priority routing:** VIP customers go to senior agents
  + **Manual override:** Admin can assign specific inbox to someone
* **Staff View:**
  + Web inbox module with:
    - Message view + reply
    - Customer profile (from mapping system)
    - AI reply suggestion (optional)
    - Mark as resolved / escalate further / tag

### 4. 🔒 Audit Logging

* Logs every:
  + Trigger event
  + Escalation assignment
  + Staff replies and handback
  + Resolution timestamp
* Stored in inbox\_handoff\_logs with:
  + message\_id, trigger\_type, assigned\_to, response\_time, channel, customer\_id

### 5. ➡️ Rejoin Bot Flow

* After human resolves:
  + Agent marks thread as “Resolved”
  + Bot auto-responds with follow-up: > “Glad our team could help! Let me know if you have more questions.”
  + Conversation returns to AI mode unless manually locked

## 🔄 Integration Flow

* ✉ Messenger/IG/WhatsApp webhook receives message
* 🤖 AI replies if confidence score ≥ 0.7
* ⚠️ Otherwise, checks escalation rules
* ⚖️ If triggered, logs event, sends handoff alert, assigns agent
* 📢 Agent notified, joins inbox, sees full thread
* 💬 Agent resolves, hands back to bot

## 🔧 Technical Requirements

### Tables:

* inbox\_conversations
* inbox\_handoff\_logs
* staff\_profiles
* customer\_identity\_map

### APIs:

* NLP Sentiment API
* Confidence Engine
* Staff Assignment API
* Messenger / IG / WhatsApp webhook processors

## 📊 Metrics & Insights

* % of conversations escalated
* Avg. time to human response
* Top 5 escalation triggers
* Staff resolution time per agent
* Bot re-engagement success rate

## 🚀 Benefits

* Zero dead ends for customers
* Preserves AI value with fallback safety net
* Human + bot hybrid model for scalable support
* Full audit trail for quality assurance

✅ Ready to export or connect with Inbox Auto-Reply module. Let me know your next step.