

Agentes de IA para combate colaborativo

Sistema de análisis táctico militar para convertir datos multimodales en respuestas tácticas coordinadas

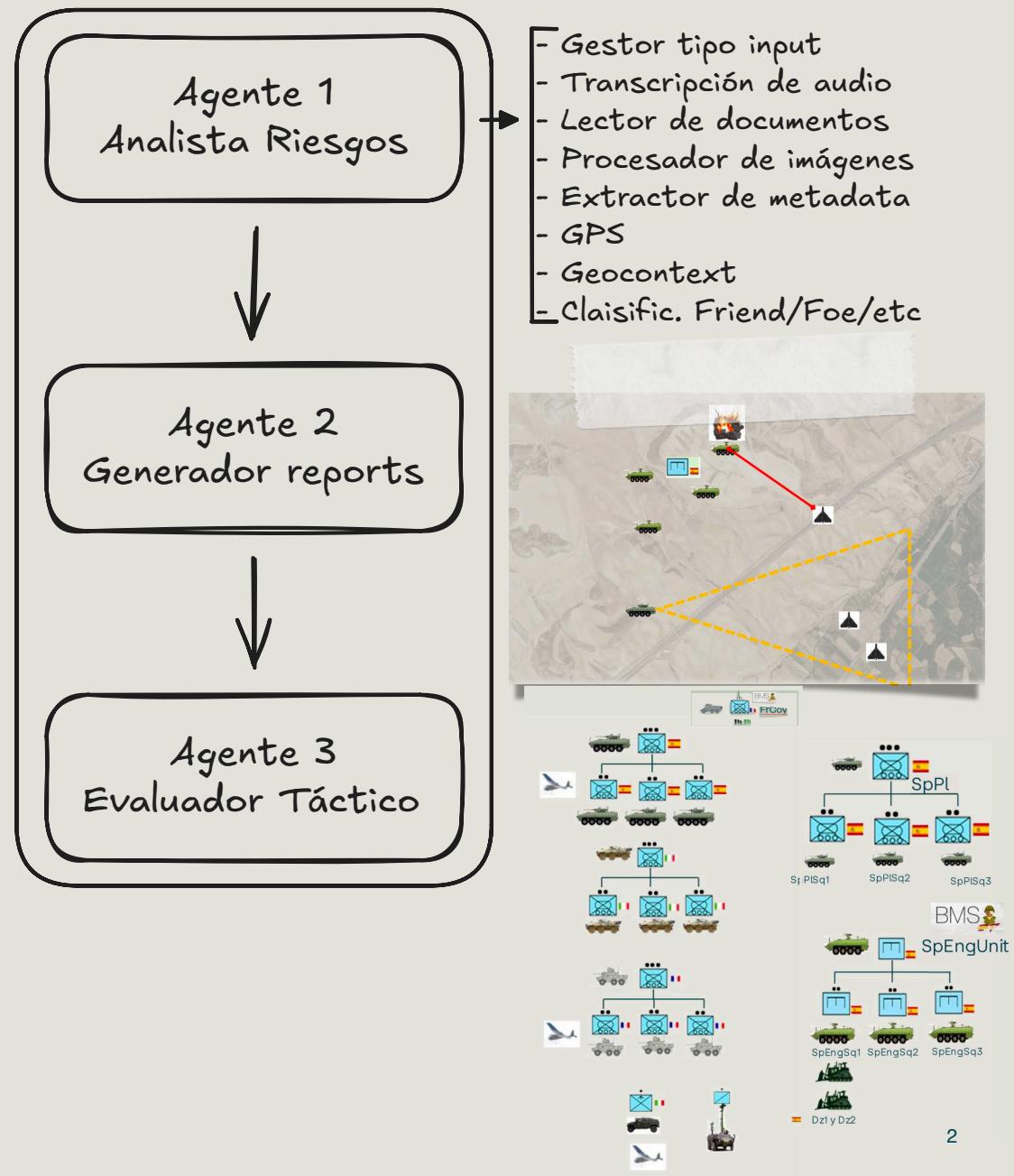
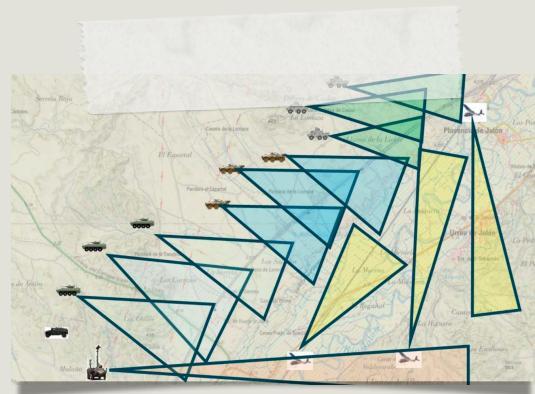


Agente de combate colaborativo

- **Contexto:** Nos encontramos en una zona hostil y cualquier de nuestras unidades o sensores detecta una señal que podría corresponder a una amenaza. Esto activa automáticamente nuestro análisis.
- **Agente 1:** Procesa y clasifica los potenciales riesgos.
 - Procesa entrada multimodal
 - Extrae localización
 - Identifica y clasifica entidades
 - Evalúa factores tácticos
- **Agente 2:** Sintetiza la info y genera el Situation Report.
- **Agente 3:** Recomienda acción táctica.

Agentes de IA para combate colaborativo

Prototipos de IA agéntica para el procesado de multimodal y la generación de respuestas tácticas coordinadas



Agente de combate colaborativo

Fwk: CrewAI

Input: Tres formas de introducir la entrada

- **MQTT:** El agente usa un consumidor MQTT para recibir alertas a tiempo real
- **Fichero:** Cargar un documento de audio, texto o imagen.
- **Interfaz:** Podemos describir una situación en el cuadro de texto de la interfaz (mission report)

Telemetría: OpenObserve

Pestañas:

- **LLM Manager:** Carga de los main LLMs y fallbacks.
- **Summary:** Descripción de todos los actores presentes
- **Threat Analysis:** Evaluación de friend/foe y nivel amenaza
- **Situation report:** Informe en formato adecuado
- **Tactical analysis response:** Recomendación de repuesta táctica

The screenshot shows the 'Tactical Analysis Crew' interface, which is an AI-powered multimodal tactical analysis system. The top navigation bar includes the logo, the title 'Tactical Analysis Crew', a subtitle 'AI-powered multimodal tactical analysis system', and a sub-instruction 'Upload files (images, audio, documents) or provide text for threat analysis'. Below the navigation, there are several tabs: 'Mission Input', 'Analysis Results', 'System Status', 'Summary', 'Threat Analysis', 'Situation Report', and 'Tactical Response'. The 'Mission Input' section contains a 'Mission Report (Text)' input field with placeholder text 'Enter your mission report, intelligence briefing, or tactical situation...', a 'Provide text-based mission information' note, and an 'Upload File' button showing 'radio_conversation.mp3 1.6 MB'. The 'Analysis Results' section is currently inactive. The 'LLM Manager Status' section displays configuration status for various models across three categories: Reasoning, Flash, and Multimodal. The 'Reasoning models' section lists Model A (gpt-4-turbo), Model B (claude-3-sonnet-20241022 not configured), Model C (gemini-2.0-flash-exp not configured), Model D (gpt-4), Model E (mistral-large-2411 not configured), Model F (deepseek-rl-distill-llama-70b not configured), Model G (quer/quen-2.5-72b-instruct not configured), and Model H (llama-3.3-70b-versatile). The 'Flash models' section lists Model A (llama-3.3-70b-versatile), Model B (llama-31-8b-instant), Model C (gemini-2.0-flash-exp not configured), Model D (gpt-4o-mini), Model E (gpt-3.5-turbo), Model F (claudia-3-haiku-20240307), and Model G (mistral-small-2409 not configured). The 'Multimodal models' section lists Model A (gpt-4o), Model B (gemini-2.0-flash-exp not configured), Model C (gpt-4-turbo), and Model D (gpt-4). At the bottom, there is a 'Run Tactical Analysis' button, an 'Examples' section with a 'Try these examples' note, and a table showing two examples: one for 'Mission Report (Text)' with the entry 'Spotted 3 armed personnel with automatic rifles moving east ...' and 'Location (Optional)' set to 'Baghdad, Iraq'; and another for 'Location (Optional)' with the entry '49.0069, 2.5476' and 'Location (Optional)' set to 'Valencia, Spain'. The footer of the interface includes the version 'Tactical Analysis Crew v1.0', the power source 'Powered by CrewAI | Multimodal AI Analysis System', and a disclaimer 'For demonstration purposes only'.

Agente de combate colaborativo

- Compartimos un fichero de audio donde un oficial solicita refuerzos.
- El agente llama a la herramienta de transcripción

Tool Output

```
AUDIO TRANSCRIPTION REPORT:
=====
Speakers detected: 2
Transcription:
SPEAKER_01: Sierra 6, this is Phantom 2.
SPEAKER_01: We are static at grid.
SPEAKER_01: 35.894
SPEAKER_01: negative 5.2815 for rally.
SPEAKER_01: requesting sit rep.
SPEAKER_01: Over.
SPEAKER_00: Phantom 2, this is 6. Go with your Report 2, confirming coordinates.
SPEAKER_00: What is your current holding strength?
SPEAKER_00: Over.
SPEAKER_00: 6
SPEAKER_00: forces.
SPEAKER_01: We have 30 infantrymen.
SPEAKER_01: with basic equipment only.
SPEAKER_01: No AT weapons.
SPEAKER_01: Location
SPEAKER_01: We hold the high ground at this position.
SPEAKER_01: Visibility is fair.
SPEAKER_01: Over.
SPEAKER_00: Copy 30 men high ground.
SPEAKER_00: Now.
SPEAKER_00: Describe the threat. Be precise. Over.
SPEAKER_01: Threat is an under-termant force.
SPEAKER_01: estimated between 50 and 70 combatants.
SPEAKER_01: They're equipped with sniper rifles, suppressing our ability to observe or maneuver.
SPEAKER_01: Furthermore,
SPEAKER_01: We have confirmed.
SPEAKER_01: M60A, 3T, Reno Summings 2.
SPEAKER_01: Bratel IFV vehicles.
SPEAKER_01: Advancing toward our base position.
SPEAKER_01: Over.
SPEAKER_00: Copy Heavy Armor.
SPEAKER_00: Are they within effective firing range of your infantry now, too?
SPEAKER_00: and is there any potential flanking route they are taking?
SPEAKER_00: Over.
SPEAKER_01: negative not yet in range, but they are closing fast on the main access road.
SPEAKER_01: the current path
SPEAKER_01: makes a flanking maneuver difficult.
SPEAKER_01: but they will be able to target us from below within five minutes.
SPEAKER_01: We are pinned down.
SPEAKER_01: Over.
SPEAKER_00: Understood, Phantom 2.
SPEAKER_00: My location.
SPEAKER_00: We are staging counter-mobility elements 3 kilometers east. Hold the ridge line at all costs. Do not let them breach your position. A forward air observer is on route. Six out.
SPEAKER_01: Copy, six.
...
```

- A partir de la transcripción, el agente infiere la localización, los activos disponibles, las amenazas presentes y demás consideraciones relevantes

Analysis Results

System Status Summary Threat Analysis **Situation Report** ...

- **Location:** Grid coordinates 35.894, -5.2815
- **Activity:** Holding high ground, maintaining visibility and defensive posture
- **Classification Basis:** Friendly force, cooperative communication, military equipment

[FOES]

- **Entity ID:** H-01
 - **Classification:** Foe (Hostile Military)
 - **Numbers:** Estimated between 50-70 combatants
 - **Description:** Armed with sniper rifles, and advancing with heavy armor including 1 M60A, 3T (possible miscommunication), Bratel IFVs
 - **Location:** Advancing toward the friendly team's high ground position via the main access road
 - **Activity:** Aggressive maneuvering, suppressing friendly forces' ability to observe or maneuver
 - **Tactical Posture:** Offensive approach using heavy armor and sniper fire, aiming to breach the friendly position
 - **Classification Basis:** Armed engagement against friendly forces, equipped with advanced weaponry and hostile intent
 - **Threat Level:** High, due to numerical superiority, advanced weaponry, and aggressive tactics

===== TACTICAL FACTORS ASSESSMENT =====

- **Terrain Advantage:** Friendly forces hold the high ground, which is a significant defensive advantage
- **Fields of Fire:** Limited due to sniper suppression from hostile forces
- **Environmental Conditions:** Visibility is described as fair, impacting visual confirmation of enemy strength and movements
- **Civilian Proximity:** No data on civilian proximity provided.
- **Strategic Assets:** None specified, but control of the high ground is tactical crucial.

Agente de combate colaborativo

- Una vez procesados todos los factores se genera un **reporte situacional** y se llama al agente planificador (Evaluador Táctico)

Analysis Results

System Status | Summary | Threat Analysis | Situation Report | ...

EXECUTIVE SUMMARY

The situation involves a high-ground defensive position held by friendly forces (30 infantrymen) against an advancing hostile force estimated to be between 50-70 combatants, equipped with sniper rifles and heavy armor. The hostile force is maneuvering aggressively, aiming to breach the friendly position. **THREAT LEVEL: HIGH** due to numerical superiority, advanced weaponry, and aggressive tactics. Key concerns include the potential for the hostile force to outflank or overwhelm the friendly position.

THREAT LEVEL: HIGH | **ENTITY CLASSIFICATION SUMMARY**

Category	Count	Status
FRIENDS	30	Defensive posture, holding high ground
FOES	50-70	Aggressive maneuvering, heavy armor
CIVILIANS	0	No civilians reported in the area
unknown	0	No unknown entities identified

Extraído íntegramente del clip de audio

- El evaluador táctico **analiza** las (des)ventajas, factores de riesgo, potenciales daños colaterales, riesgos de escalada, etc
- Y propone un plan de detallado **plan de acción** teniendo en cuenta las ROE, los recursos necesarios, contingencias, información necesaria, etc
- Adicionalmente, se provee el razonamiento justificando el plan propuesto

Tactical Analysis Crew

AI-powered multimodal tactical analysis system

Upload files (images, audio, documents) or provide text for threat analysis

Analysis Results

System Status | Summary | Threat Analysis | Situation Report | ...

EXECUTION GUIDANCE

Primary Actions:

- Employ artillery targeting advancing armored units while minimizing exposure.
- Coordinate air strikes against densest enemy formations and key equipment.
- Maintain defensive positions, leveraging high ground; return fire strategically.

Rules of Engagement (ROE):

- Hostile Act Criteria: Engage upon clear, aggressive action towards friendly positions.
- Unknown Entity Handling: No unknown entities; focus remains on identified threats.
- Civilian Protection Measures: No civilians present; continue monitoring.

Resource Requirements:

- Ammunition: Sufficient for sustained defensive operation; prioritize anti-armor rounds.
- Fuel: Ensure vehicles are fueled for potential movement or withdrawal.
- Medical: Prepare medical evacuation routes and prioritize quick response capabilities.
- Assumes standard resupply capabilities unless otherwise noted.

CONTINGENCIES

- IF enemy forces break through initial defensive lines: THEN fallback to secondary positions while calling additional support.
- IF enemy halts advance or withdraws: THEN continue current defensive stance, monitor for regrouping.

INFORMATION REQUIREMENTS (CRITICAL GAPS)

Agente de combate colaborativo

- Prints del agente en el back

```

    ✓ Agent Final Answer —
Agent: Intelligence Report Generator
Final Answer:
=====
** SITUATION REPORT **

DTG: 2023-02-20 14:30:00
LOCATION: Grid coordinates 35.894, -5.2815
CLASSIFICATION: CONFIDENTIAL

===== EXECUTIVE SUMMARY

The situation involves a high-ground defensive position held by friendly forces (30 infantrymen) against an advancing hostile force estimated to be between 50-70 combatants, equipped with sniper rifles and heavy armor. The hostile force is maneuvering aggressively, aiming to breach the friendly position. **THREAT LEVEL: HIGH** due to numerical superiority, advanced weaponry, and aggressive tactics. Key concerns include the potential for the hostile force to outflank or overwhelm the friendly position.

THREAT LEVEL: **HIGH**
===== ENTITY CLASSIFICATION SUMMARY



| Category  | Count | Status                                 |
|-----------|-------|----------------------------------------|
| FRIENDS   | 30    | Defensive posture, holding high ground |
| FOES      | 50-70 | Aggressive maneuvering, heavy armor    |
| CIVILIANS | 0     | No civilians reported in the area      |
| UNKNOWN   | 0     | No unknown entities identified         |


===== PRIORITY THREATS (Immediate Attention Required)

1. **H-01**: Hostile Force – Grid coordinates 35.894, -5.2815 (approaching)
   - Threat: Numerical superiority, advanced weaponry, and aggressive tactics
   - Capability: Sniper rifles, 1 M60A3T, 3 Bratel IFVs
   - Activity: Advancing toward the friendly team's high ground position

2. **M60A3T**: Main Battle Tank – Part of H-01's armor
   - Threat: High-caliber firepower and mobility
   - Capability: Engaging targets at long range with precision
   - Activity: Supporting infantry advance

3. **Bratel IFVs**: Infantry Fighting Vehicles – Part of H-01's armor
   - Threat: Providing suppressive fire and transporting infantry
   - Capability: Equipped with machine guns and possibly anti-tank missiles
   - Activity: Advancing with infantry, providing covering fire

===== UNKNOWN ENTITIES (Requiring Intelligence Collection)

- None reported at this time. However, the estimated number of hostile combatants (50-70) introduces some uncertainty regarding the exact force composition and capabilities.

===== TACTICAL SITUATION

**Terrain**: High ground held by friendly forces, with limited access via the main road, making it difficult for hostile flanking maneuvers.
**Environment**: Fair visibility, which impacts visual confirmation of enemy strength and movements.
**Civilian Considerations**: No civilians reported in the immediate area, reducing the risk of collateral damage.
**Strategic Assets**: Control of the high ground is tactically crucial, providing a defensive advantage and visibility over the surrounding area.

===== INTELLIGENCE GAPS

- Exact numerical strength and composition of the hostile force
- Precise identification and capabilities of enemy armor (e.g., confirmation of M60A3T and Bratel IFV details)
- Real-time updates on hostile force movements and intentions

===== BOTTOM LINE

The situation is critical, with a hostile force advancing on a friendly defensive position, necessitating immediate coordination for air and possibly artillery support to counter the enemy's numerical superiority and armor capabilities. Continuous monitoring and updates are essential to maintain situational awareness and adapt to the evolving battle scenario.

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Status: Executing Task... ✓ Agent Final Answer —
Agent: Tactical Advisor
Final Answer:
=====
** TACTICAL RESPONSE RECOMMENDATION **

===== RECOMMENDED COURSE OF ACTION (COA)

**ACTION**: ENGAGE
**RISK ASSESSMENT**: **ACCEPTABLE RISK**
===== EXECUTIVE SUMMARY

The current position and prepared state of the friendly forces, despite facing numerical superiority, allows for an actionable defense to repel the enemy's advance effectively. Engaging from a high-ground position with artillery and air support minimizes friendly casualties while exploiting enemy vulnerabilities as they approach.
===== DETAILED JUSTIFICATION

**Tactical Advantage Analysis**:
- Force Ratio: Friendly 30 vs Hostile 50-70. Disadvantage in numbers but offset by terrain and support.
- Equipment Advantage: Enemy snipers and armor are notable but can be countered effectively with targeted artillery and air support.
- Positional Advantage: High ground and limited access routes for the enemy provide significant defensive benefit.
- Element of Surprise: Likely absent as enemy is aware but may be achieved with unexpected intensity and targeting in the engagement.
- Conclusion: Clear tactical advantage is possible with appropriate force application and support.

**Risk Factors**:
- Estimated Friendly Casualties: 5-15% if air and artillery support effectively neutralize main threats.
- Known Threats: Superior number of enemy troops, sniper capability, and armored vehicles.
- Unknown Threats: Exact numbers and capability extent of enemy forces.
- Environmental Hazards: Fair visibility may limit enemy's advanced weapons utilization effectiveness.

**Collateral Damage Assessment**:
- Civilian Proximity: No civilians in immediate area.
- Collateral Risk Level: **LOW**
- Strategic Asset Risk: Potential risk to high-ground position if lost.
- Mitigation Measures: Precision in artillery and air strikes to avoid unnecessary damage.

**Escalation Risk**:
- Local Containment: High likelihood of keeping engagement localized.
- Broader Conflict Potential: Low if engagement remains confined to current battlefield.
- Assessment: LOW escalation risk.
===== EXECUTION GUIDANCE

**Primary Actions**:
1. Employ artillery targeting advancing armored units while minimizing exposure.
2. Coordinate air strikes against densest enemy formations and key equipment.
3. Maintain defensive positions, leveraging high ground; return fire strategically.

**Rules of Engagement (ROE)**:
- Hostile Act Criteria: Engage upon clear, aggressive action towards friendly positions.
- Unknown Entity Handling: No unknown entities; focus remains on identified threats.
- Civilian Protection Measures: No civilians present; continue monitoring.

**Resource Requirements**:
- Ammunition: Sufficient for sustained defensive operation; prioritize anti-armor rounds.
- Fuel: Ensure vehicles are fueled for potential movement or withdrawal.
- Medical: Prepare medical evacuation routes and prioritize quick response capabilities.
- Assumes standard resupply capabilities unless otherwise noted.

===== CONTINGENCIES

- IF enemy forces break through initial defensive lines: THEN fallback to secondary positions while calling additional support.
- IF enemy halts advance or withdraws: THEN continue current defensive stance, monitor for regrouping.

===== INFORMATION REQUIREMENTS (CRITICAL GAPS)

- Exact enemy force size and equipment details.
- Real-time intelligence on enemy movement and potential reinforcements.

===== BOTTOM LINE UP FRONT (BLUF)

**RECOMMENDATION**: Engage using combined arms while maintaining defensive posture to leverage tactical advantages. **RISK LEVEL**:
Acceptable
**COMMANDER'S DECISION REQUIRED BY**: Immediate action recommended due to enemy advance.

```