

Collaborative System Coordination Design for Urban Crisis: Resolution Using Multi-Agent Technology

Team 05

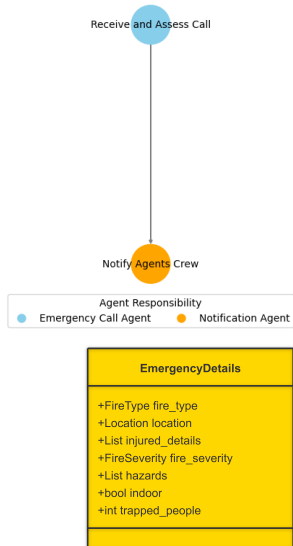
December 7, 2024

Introduction

- **Objective:** Design the cooperation and coordination mechanisms that will be used to solve the emergency response for fire-related emergencies in Lloret de Mar, Girona.
- **Teams Involved:**
 - Emergency Services
 - Firefighters
 - Medical Services
 - Public Communications
 - *Forensics*
- **Overview:**
 - For each crew: process definition and Pydantic outputs.
 - Agent interactions: flows and routers.

Emergency Services Process and Outputs

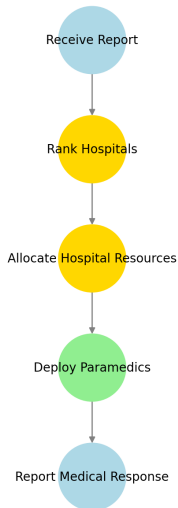
Sequential Process Flow with Agent Responsibility



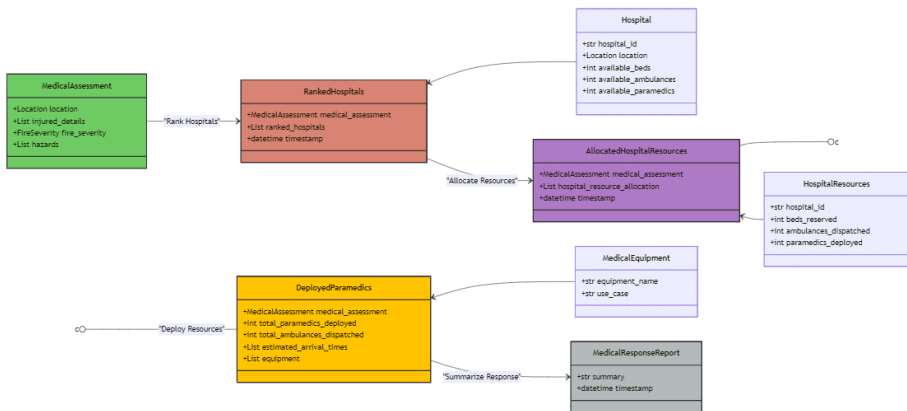
- What type of fire is it?
- Where is it?
- Is anyone injured? How badly?
- How severe is the fire?
- Are there hazards?
- Is it an indoor or outdoor fire?
- Is anyone inside or trapped?

Medical Services Process

Medical Services Crew Task Flow

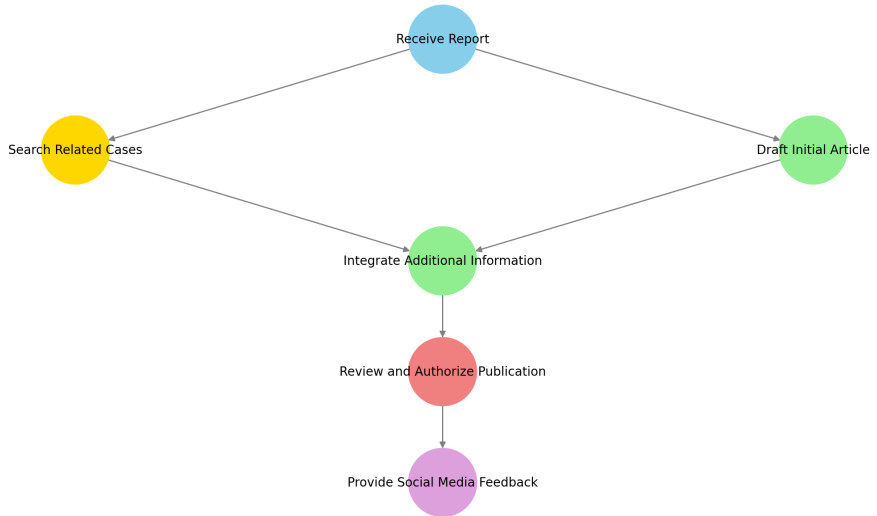


Medical Services Outputs

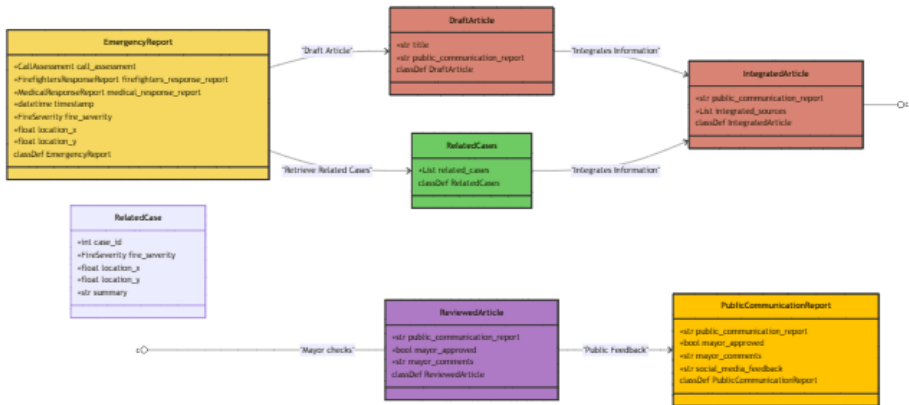


Public Communications Process

Sequential Process Flow with Agent Responsibility



Public Communications Outputs



References

- Wooldridge, Michael. An Introduction to MultiAgent Systems. 2nd ed., John Wiley & Sons, 2009. ISBN 978-0-470-51946-2.
- Wooldridge, Michael. "Properties of Intelligent Autonomous Agents." YouTube, 26 Feb. 2010,
https://www.youtube.com/watch?v=vID-_uIfAvg.