Blog Post 1: The "Command Center" View: Introducing PANTHEON's Geospatial Platform

In a major disaster, data is overwhelming. It comes from everywhere: 911 calls, first responder reports, satellite images, social media, and now, swarms of drones and IoT sensors. The problem is rarely a *lack* of data; it's that the data is disconnected. It exists in different formats, on different systems, and doesn't form a single, understandable picture.

This is the core problem our **D6.2: Integration of Geospatial Information Technologies** deliverable is built to solve. We are developing the PANTHEON **GeoPlatform**—a central command-and-control center designed to unify these diverse technologies within a single framework.

Creating the Common Operational Picture

The goal is to produce a "Common Operational Picture," a system that enhances situational awareness for everyone involved, from high-level commanders to teams on the ground.

To do this, our platform is built to **fuse, process, and visualize** data in real-time from every available source:

- **Earth Observation (EO):** Satellite data from partners like the Copernicus Emergency Management Service provides the large-scale view for pre- and post-disaster analysis.
- **Unmanned Vehicles (UxVs):** Real-time, high-resolution video and sensor data from our drone swarms provide the on-the-ground "eye in the sky".
- **Ground-Based IoT Sensors:** A network of IoT sensors can provide live ground-level data on everything from water levels and temperature to air quality.

As you can see in the figure from our system, the platform is designed to fuse these heterogeneous layers—showing schools, police stations, hospitals, and critical infrastructure all on one map.

Why Open Standards are Non-Negotiable

A system like this cannot be a "black box." To be truly effective, it must be **interoperable**. We are building this platform on a foundation of open-source platforms and OGC-compliant standards.

This is a critical decision. By using open standards like the **Open Geospatial Consortium's (OGC)** Web Map Service (WMS) and Web Feature Service (WFS), we ensure our platform can talk to other systems. This means we can pull in data from a partner agency or share our maps with a different organization's tools without needing custom, brittle integrations. This principle, also central to Europe's **INSPIRE Directive**, is key to building a collaborative and sustainable system.

In this blog series, we'll take you on a tour of this platform's architecture. We'll explore the "building blocks" of a smart disaster map, dive deep into the open-source tools we're using (like **GeoServer** and **PostGIS**), and show how this platform works in real-world case studies.

Up next: How do we technically connect all these different technologies? We'll dive into the open-source architecture that powers the PANTHEON GeoPlatform.