



HADR

Humanitarian Aid and Disaster Relief | Grey Bull Rescue

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Turning Live OSINT Data & Case Management into Decision Advantage

Humanitarian Aid and Disaster Relief missions require rapid understanding of changing conditions, affected populations, mobility constraints, infrastructure status, and assistance demand. During a crisis, mission partners often operate across fragmented data sources: weather feeds, news reporting, vessel and aviation tracking, infrastructure layers, border crossing information, route planning tools, and disconnected case management spreadsheets.

The HADR platform was created to support a mission partner by consolidating live open-source intelligence, infrastructure awareness, mobility analysis, route analytics, and case management data into a single operational view. The platform enables teams to monitor natural disasters, hurricane tracks, flood zones, infrastructure, real-time weather, real-time news, vessel positions, live flights, land and border crossings, and route conditions within one mission-aware environment.

Beyond situational awareness, the platform transforms case management data from static CSV reporting into operational intelligence. Intake records can be analyzed by immigration status, age distribution, geographic distribution, accommodation needs, and other assistance factors. This gives mission partners a clearer view of who needs help, where demand is emerging, what support may be required, and how operational resources should be prioritized. Together, these capabilities create a repeatable system for HADR planning, response coordination, evacuation support, and population assistance. The platform gives decision-makers a live picture of the environment, the movement network, and the people requiring support.

Mission Challenge

Fragmented Operational Data

Critical information exists across separate weather feeds, news sources, geospatial layers, flight trackers, maritime feeds, infrastructure data, and mobility tools.

Limited Route and Infrastructure Context

A route between two points may appear available, but responders still need to understand flood exposure, infrastructure damage, transportation options, border access, land mobility, and places of interest along the route.

Static Case Management Reporting

Assistance intake data is often managed in spreadsheets or CSV exports, which limits its value for real-time decision-making, resource allocation, and mission coordination.

HADR operations are time-sensitive, data-heavy, and coordination-intensive. Teams must make decisions while conditions are changing across the air, land, maritime, infrastructure, and information environments. Natural disasters may disrupt roads, airports, ports, utilities, shelters, border crossings, and communications networks at the same time that assistance requests are increasing. The HADR platform addresses these gaps by connecting live environmental data, mobility intelligence, infrastructure analysis, and case management analytics into one operational framework.



Platform Overview

The HADR platform provides a unified environment for monitoring crisis conditions, analyzing mobility options, understanding infrastructure risk, and assessing assistance demand. It is designed to support mission partners before, during, and after disaster events by combining live open-source data with mission-specific case management workflows.

The Platform has two primary capability areas:

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| [1] Live Operational Awareness | Displays real-time and near-real-time OSINT data related to disasters, mobility, infrastructure, transportation, weather, news, vessels, flights, and crossings. This helps teams understand what is happening, where it is happening, and how conditions may affect mission execution. |
| [2] Case Management Analytics | Ingests and analyzes assistance intake data by status, demographics, geography, needs, and accommodations. This moves case management beyond CSV reporting into operational planning and resource prioritization. |

Real Time OSINT & Operational Awareness

The platform integrates live OSINT and geospatial data into a common operating picture for HADR missions. Instead of requiring teams to monitor separate websites, spreadsheets, dashboards, and reports, the platform presents relevant mission data in one place.

Data Used:

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| Natural Disasters | ▪ Active events and disaster indicators that may affect populations, infrastructure, and mobility. |
| Hurricane Tracks | ▪ Storm paths, forecast cones, and related hazard areas to support planning and response. |
| Flood Zones | ▪ Flood exposure areas that may affect evacuation routes, shelters, infrastructure, and population access. |
| World Infrastructure | ▪ Critical facilities, transportation networks, ports, airports, roads, border crossings, and other mission-relevant assets. |
| Real-Time Weather | ▪ Current and forecast weather conditions that may affect safety, response timing, aviation, maritime movement, and ground mobility. |
| Real-Time News | ▪ Live reporting to provide context on emerging events, local conditions, public messaging, disruptions, and security concerns. |
| Real-Time Vessel Positions | ▪ Maritime traffic awareness for ports, shipping lanes, evacuation corridors, aid delivery, and coastal response. |
| Live Flights | ▪ Aviation activity awareness for airports, airspace access, evacuation movement, and logistics planning. |
| Land & Border Crossings | ▪ Crossing locations, access points, and surrounding infrastructure that may affect population movement and mission coordination. |
| Route Analytics | ▪ Assessment of available routes, transportation options, infrastructure exposure, and places of interest between origin and destination points. |

This live awareness layer allows mission partners to see the operational environment as it changes, identify emerging constraints, and align response decisions to current conditions.



Land & Border Crossing Analysis

Land and border crossings are critical during HADR operations, especially when displaced populations, evacuees, aid convoys, or mission teams need to move across constrained terrain or international boundaries. The platform uses computer vision analysis to help assess the type of infrastructure and land mobility in an area.

These analytics can support the understanding of:

- Road & Route Conditions
- Bridge & Crossing Infrastructure
- Facility Type & Accessibility
- Land Mobility Constraints
- Transportation Corridors
- Potential Staging or Support Areas
- Border Crossing Characteristics
- Nearby Infrastructure & POI

This allows teams to move beyond simply knowing where a crossing exists. They can better understand what type of infrastructure surrounds it, whether the area appears suitable for movement or staging, and what constraints may affect mission execution.

Route Planning & Mobility

The created route planner assesses infrastructure and places of interest between Point A and Point B. This supports operational movement planning for response teams, evacuees, aid delivery, logistics convoys, and partner coordination.

This capability evaluates:

- Transportation options between origin and destination
- Road networks and mobility corridors
- Critical infrastructure along or near the route
- Flood zones, disaster areas, and weather-related risk
- Airports, ports, border crossings, and other access points
- Medical facilities, shelters, logistics nodes, and staging areas
- Places of interest that may affect safety, access, or mission planning

By connecting routes to the surrounding operational environment, the platform helps mission partners answer practical questions:

- Which route is most viable under current conditions?
- What infrastructure exists along the route?
- Are there flood zones, disaster impacts, or weather conditions that could affect movement?
- What transportation options are available?
- What support locations, access points, or facilities exist between the start and end point?

This turns route planning from a navigation task into a mission analysis workflow.



Case Management

The second major component of the HADR platform is the ability to bring in case management data and provide an analytical view of all assistance intakes. During a crisis, case management records often contain mission-critical information, but the data is frequently trapped in disconnected reporting systems.

The platform analyzes intake data across categories such as:

Immigration Status	Age Distribution	Geographic Distribution
Accommodation Needs	Assistance Request Type	Household or Family Composition
Priority Indicators	Frequency of Support	Trends in demand over time

Traditional case management workflows often rely on CSV exports, manual reporting, and static summaries. While these reports may support administrative tracking, they are limited in an active HADR mission environment. The HADR platform changes the role of case management data by turning it into operational intelligence. Instead of asking teams to interpret spreadsheets manually, the platform visualizes and analyzes intake records in ways that directly support decision-making.

This shift enables mission partners to:

- Identify geographic clusters of assistance requests
- Understand demographic and accommodation needs
- Prioritize support based on location, urgency, and vulnerability indicators
- Align transportation planning with population demand
- Compare assistance needs against infrastructure and route conditions
- Support leadership briefings with live analytical views
- Reduce time spent manually preparing reports

The result is a more actionable case management workflow. Intake data no longer serves only as a record of requests. It becomes a planning layer for response coordination, resource allocation, and mission execution.



Use Case

[1] Disaster Monitoring & Response Planning

The platform allows mission partners to monitor natural disasters, severe weather, hurricane tracks, flood zones, and infrastructure exposure in a single operational view. Teams can understand where impacts are occurring and how those impacts may affect mobility, access, and population support.

[2] Evacuation & Movement Support

By combining live flights, vessel positions, land crossings, route analytics, weather, infrastructure, and places of interest, the platform supports evacuation planning and movement coordination. Teams can assess transportation options and identify viable routes based on current operational conditions.

[3] Case Management & Assistance Prioritization

The case management analytics layer helps mission partners understand who is requesting support, where they are located, and what needs they have. This supports more informed prioritization and reduces reliance on manual spreadsheet analysis.

[4] Leadership Briefings & Operational Reporting

The platform provides analytical views that can support daily updates, operational briefings, and mission partner coordination. By consolidating live data and case management insights, leadership can receive a clearer, faster, and more defensible picture of mission needs.

Differentiators

The platform brings together live OSINT, weather, disasters, flights, vessels, infrastructure, border crossings, and route analytics in one environment. This reduces fragmentation and gives mission partners a common picture of the crisis.

Unified Live Mission

- The platform brings together live OSINT, weather, disasters, flights, vessels, infrastructure, border crossings, and route analytics in one environment. This reduces fragmentation and gives mission partners a common picture of the crisis.

Infrastructure Aware Route Analysis

- The route planner evaluates infrastructure, transportation options, flood exposure, places of interest, and access points between Point A and Point B so teams can plan movement in context.

CV for Mobility & Infrastructure Assessment

- Computer vision analysis supports understanding of land and border crossing areas by identifying infrastructure type, accessibility indicators, and mobility context. This strengthens situational awareness where ground access may be constrained or uncertain.

Case Management as Operational Intelligence

- The platform transforms intake records from static CSV reports into analytical views that support resource allocation, prioritization, geographic planning, and mission execution.



Humanitarian Aid & Disaster Relief

A Mission Partner Platform

The HADR platform gives mission partners a stronger ability to understand, plan, and act during complex humanitarian and disaster response operations. By combining live crisis data, infrastructure analysis, route planning, transportation awareness, and case management analytics, the platform reduces the gap between information collection and mission execution. HADR missions demand more than disconnected data feeds and static reports. They require a platform that connects live environmental conditions, mobility networks, infrastructure context, transportation options, and assistance requests into a mission-ready view.

The HADR platform provides that capability. It enables mission partners to monitor disasters, assess infrastructure, understand routes, track movement networks, analyze case management data, and prioritize support in a single operational environment. Most importantly, it turns fragmented information into actionable intelligence for humanitarian response.

The Future of Mission Advantage.

