🎨 Design Blueprint: Visualizing TRINETRA

The goal is to design interfaces that are **calm, actionable, and context-aware**, reinforcing the systemic nature of the product.

1. Visual Style & Color Palette

Element	Color Code (Hex)	Purpose & Rationale
Primary Action	#007AFF (Vibrant Blue)	Used for **SOS, Dispatch, and Verify** buttons. Indicates trust and immediate action.
Success/Safe	#34C759 (Vibrant Green)	Used for **"I'm Safe"** and **"Zone Cleared"** status. Reassurance.
Advisory/Watch	#FFCC00 (Vibrant Yellow)	Low to Medium severity alerts. Caution, not panic.
Warning/Danger	#FF3B30 (Vibrant Red)	High severity alerts and **Immediate Action** zones. Demands attention.
Background (Citizen)	#FFFFFF (Pure White)	High contrast, easy to read in panic/stress situations.
Background (Command)	#1C1C1E (Dark Grey/Black)	Reduces eye strain for long shifts, provides dramatic contrast for data visualizations.

2. Map-First Visualization

The map is the **primary UI element** for all three tiers, ensuring seamless transition and context.

- **Citizen Layer:** Map shows **only** the user's location, safe routes, shelters, and their immediate vicinity's Community Pulse reports. Risk areas are a **transparent, pulsing overlay**.
- **Local Planner Layer:** Map is the central **operational view**. It uses multiple **toggleable data layers** (weather forecast, IoT data, verified reports, volunteer locations). Data layers are semi-transparent and color-coded.
- **Central Command Layer:** Map uses **data aggregation and clustering**. It focuses on **macro heatmaps** (e.g., population density overlaid on risk zones) and clear demarcation of administrative boundaries.

3. Iconography

Uses **SF Symbols (iOS) or Material Icons (Android/Web)** for immediate recognition, tailored to disaster types:

- **Flood:** $\approx$ Blue wave icon
- **Fire:** $\approx$ Red/Orange flame icon
- **Earthquake:** $\approx$ Cracking ground icon
- **Shelter:** $\approx$ House/Roof with a person icon
- **SOS:** $\approx$ Pulsing red beacon/dot

🟢 1. Citizen Layer: User Flow & Interface Focus

UX Focus: Calm, guided, immediate action.

Feature	Interface Detail	Core Functionality Flow

Smart Alerts Feed	Full-screen **Alert Card** appears on launch. Uses the **Red, Yellow, or Blue banner** at the top.	**Alert Received $\rightarrow$ Read Summary $\rightarrow$ Tap "View Instructions" $\rightarrow$ Map automatically zooms to the risk zone and highlights the nearest safe route.**
Community Pulse	Bottom sheet/drawer accessible from the main map. Simple "New Report" button with three quick-tap categories: **"Blockage," "Hazard," "Supply Need."**	**User taps "New Report" $\rightarrow$ Selects Category $\rightarrow$ Takes Geo-tagged photo (optional) $\rightarrow$ Tap "Post."**
SOS / I'm Safe	**Persistent, large FAB (Floating Action Button)** in the bottom corner. Red for SOS (swipe to confirm), Green for I'm Safe (single tap).	**Swipe Red SOS $\rightarrow$ Confirm Dialogue $\rightarrow$ GPS ping initiated (continuous) $\rightarrow$ Alert sent to Local Planner.**

🟡 2. Local Planner Layer: User Flow & Interface Focus

UX Focus: Tactical clarity, real-time control.

Feature	Interface Detail	Core Functionality Flow
Forecast Console	Left-hand control panel for **layer toggles** (e.g., toggle ON: IoT Sensors, Predicted Flood Zone, Verified Roadblocks).	**Planner Toggles Flood Layer ON $\rightarrow$ System displays AI-predicted zone (polygons) $\rightarrow$ Planner taps zone**

		$\rightarrow$ "Create Evacuation Order" button appears.
Task & Resource Manager	**Split View:** Map (70% of screen) on the right, **Kanban Task List** (30% of screen) on the left. Tasks on the list are dynamically pinned to locations on the map.	**Planner clicks a citizen SOS pin on the map $\rightarrow$ A task card pops up $\rightarrow$ Planner taps "Assign Volunteer" $\rightarrow$ Selects available volunteer from list $\rightarrow$ Task moves from "New" to "Active."**
Crowdsourced Validation	Dedicated "Validation Queue" Tab/Section. Presents reports in a **card stack** format (like flashcards) for quick review.	**Planner views Report Card (with photo/location) $\rightarrow$ Taps "Verify" (green) or "Dismiss" (grey) $\rightarrow$ Next card loads automatically.**

🔴 3. Central Command Layer: User Flow & Interface Focus

UX Focus: Strategic oversight, unified control.

Feature	Interface Detail	Core Functionality Flow
National Situation Map	Large, dynamic map with a **key performance indicator (KPI) banner** across the top: **Active	Displaced Pop.

	Incidents	
Decision Intelligence	**Data Visualization Widgets** docked to the right/bottom of the map. Widgets include **Predictive Risk Graphs** (e.g., "Predicted Pop. in Danger over next 4 hours") and the **AI Summary text box**.	**Commander reviews AI Summary $\rightarrow$ Sees a critical resource shortage (e.g., Helicopters) $\rightarrow$ Taps "Resource Allocation" widget $\rightarrow$ View instantly shows national availability and location.**
Command & Dispatch	**Dedicated Command Modal.** Requires a multi-step confirmation process to send sensitive orders.	**Commander taps "Issue Priority Order" $\rightarrow$ Selects Target Local Planner(s) (on map) $\rightarrow$ Drafts Order Text $\rightarrow$ Confirms $\rightarrow$ Order instantly locks the target Local Planner's screen until acknowledged.**