Search & Rescue Simulation Toolkit

Module 1 - Urban Earthquake Sector Command & Technical Rescue Operations



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Module Guide & Safety Scope



Toolkit Section	Core Operational Focus	Target Participant Task
CARD1 - Response Cycle Deck	Sequencing 5 core response phases	Order cards from readiness to debrief
ACT1 - Response Cycle Relay	Event triage & operational assignment	Assign event slips to response phases
BOARD1 - ASR Level Decision Board	INSARAG Assessment Levels 1-5	Classify field reports by ASR level
CARDS1 - ASR Situation Cards	Field scenario ASR evaluation	Match situation cards with correct ASR level
MAP1 & MAP2 - Sectoring & Reference	Wide-area grid & building reference	Define Sector Alpha/Bravo boundaries & entry gates
GATE1 - Site Entry Readiness	Go / Hold / Escalate safety gate	Evaluate structural stability before entry

CARD1 — Response Cycle Sequencing Deck



Sequence Phase	Phase Title	Operational Objectives
Phase 1	Readiness & Activation	Mobilise team, verify equipment, establish command communications.
Phase 2	Wide-Area Assessment (ASR 1/2)	Conduct rapid aerial/ground recon, identify collapse sites.
Phase 3	Sectoring & Priority Allocation	Divide area into Sectors Alpha/Bravo, assign rescue units.
Phase 4	Technical Search & Rescue (ASR 3/4)	Deploy canine/acoustic search, breach structures, extract casualties.
Phase 5	Demobilisation & Debrief	Conduct structural hand-over, team debrief, and equipment check.

ACT1 — Response Cycle Relay



Event Slip	Incident Field Description	Correct Response Phase	Required Action
Slip A	Drone footage shows 3 Pancake collapses in Sector Alpha.	Phase 2 (ASR 1/2 Recon)	Log GPS coordinates & notify operations commander.
Slip B	Live visual contact with trapped survivor under slab.	Phase 4 (ASR 3/4 Rescue)	Deploy acoustic search & heavy shoring team.
Slip C	Aftershock causes secondary movement on Sector Bravo site.	Phase 4 (Safety Gate)	Issue immediate hold order & evacuate entry gate.
Slip D	Local authority requests structural safety assessment of hospital.	Phase 3 (Sector Allocation)	Assign structural engineer unit to hospital sector.

BOARD1 — ASR Level Decision Board



ASR Level	INSARAG Definition	Primary Focus & Methodology
ASR 1	Wide Area Assessment	Determine scope of damage, major hazards, and general sector boundaries.
ASR 2	Sector Assessment	Detailed assessment of assigned sector; identify specific building collapse types.
ASR 3	Rapid Search & Rescue	Surface rescue and rapid technical search for accessible survivors.
ASR 4	Heavy Search & Rescue	Breaching, shoring, lifting, and prolonged technical extraction.
ASR 5	Total Site Clearance	Debris removal, body recovery, and final site hand-over to local authorities.

CARDS1 — ASR Situation Cards



Card ID	Field Situation Scenario	Assigned ASR Level
Card A	Helicopter flyover shows widespread destruction across 4 city districts.	ASR 1 (Wide Area Assessment)
Card B	Rescue team arrives at collapsed 5-storey residential building; voices heard.	ASR 3 (Rapid Search & Rescue)
Card C	Heavy concrete slabs require crane lifting and hydraulic breaching tools.	ASR 4 (Heavy Search & Rescue)
Card D	Recon team mapping damage along Main Street to assign rescue teams.	ASR 2 (Sector Assessment)
Card E	All living survivors extracted; site cleared of hazards for demolition team.	ASR 5 (Total Site Clearance)

MAP1 — Wide-Area Sectoring Canvas



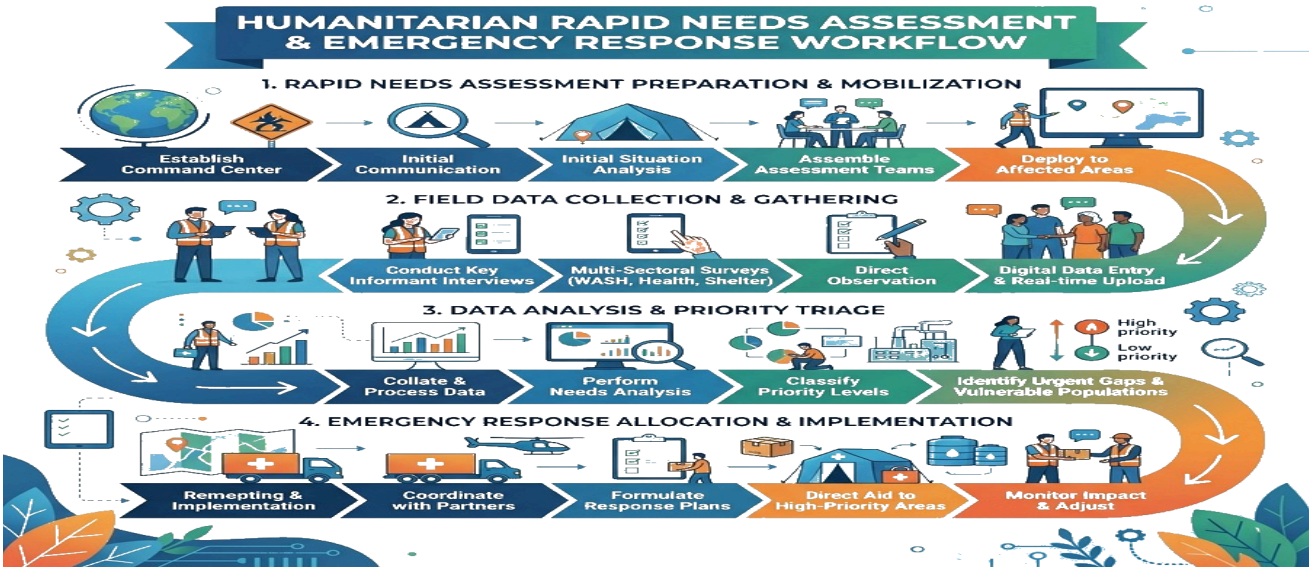
Sector Code	Geographic Boundaries	Assigned Rescue Team	Primary Hazard
Sector Alpha	North River Road to Central Boulevard	USAR Team 1 (Heavy)	Pancake collapse of commercial complex
Sector Bravo	Central Boulevard to East Railway	USAR Team 2 (Medium)	Soft-storey residential collapse
Sector Charlie	East Railway to Industrial Zone	Local Volunteer Triage Unit	Hazardous material spill & rubble fire
Sector Delta	West District Park & Residential Zone	Canine Search Team 3	Lean-to collapse with trapped residents

MAP2 — Building Sector Reference



Building Face	INSARAG Designation	Entry Gate & Safety Protocol
Front Street Face	Side 1 (Street Entry)	Main entry gate; primary command post located here.
Right Side Face	Side 2 (Clockwise)	Secondary access; shoring support required.
Rear Alley Face	Side 3 (Rear)	Hazard zone; unreinforced masonry collapse risk.
Left Side Face	Side 4 (Left)	Canine search entry point.

GATE1 — Site Entry Readiness Gate



Safety Checkpoint	Verification Criteria	Gate Decision (Go / Hold)
1. Structural Hazards	Overhanging slabs stabilized with timber shoring?	[GO] if shored
2. Atmospheric Hazards	Gas monitoring shows zero toxic fumes or explosive gas?	[GO] if clear
3. Team PPE Check	Helmets, boots, gloves, dust masks, and headlamps verified?	[GO] if complete
4. Emergency Egress Route	Two clear exit pathways marked with high-visibility tape?	[GO] if marked

LOG1 — Field Movement & Command Log



Log Time	Sector	Unit ID	Operational Action Logged	Current Status
08:15	Sector Alpha	USAR Unit 1	Deployed for ASR 2 sector assessment.	In Progress
08:45	Sector Bravo	Canine Team 3	Acoustic hit confirmed at Site B-4.	Confirmed
09:20	Sector Alpha	Heavy Unit 2	Commenced hydraulic breaching of basement slab.	Active
10:05	Sector Alpha	Medical Triage	First survivor extracted; stabilized and transferred to clinic.	Completed

ACT2 & BOARD2 — Debris Marking & Triage Prioritisation



INSARAG Marking	Meaning / Interpretation	Priority Rank (1-3)
V / 2 L / 1 D	2 Live victims confirmed, 1 Dead victim recorded.	Rank 1 (Immediate Rescue)
V / 0 L / 0 D	Search complete; zero victims found.	Rank 3 (Site Cleared)
V / 1 L / 0 D (Gas Leak)	1 Live victim trapped; active gas leak hazard.	Rank 2 (Hazard Mitigation)

CARDS2 — Casualty Triage Classification



RED (Immediate)	Life-threatening injuries requiring immediate medical extraction (airway obstruction, severe hemorrhage).
YELLOW (Delayed)	Serious non-life-threatening injuries requiring treatment within 2-4 hours (fractures, controlled bleeding).
GREEN (Minimal)	Minor injuries; walking wounded able to self-evacuate to medical station.
BLACK (Expectant)	Deceased or catastrophic injuries incompatible with life under field conditions.

SIM1 — Fixed Simulation: Urban Earthquake Sector Command

Simulation video

Open the linked file in your browser or media player.



[OPEN VIDEO — CLICK TO PLAY]

Mission: Command the urban earthquake search and rescue sector operations during the first 24 hours. Coordinate ASR assessment teams, enforce site entry readiness gates, manage casualty triage, and maintain inter-agency communications.

EV1 & EV2 — Observer Rubric & Decision Log



Evaluation Criterion	1 - Weak	2 - Developing	3 - Effective	4 - Strong
ASR Level Assignment	Incorrect levels used	Basic ASR matching	Accurate ASR triage	Proactive ASR escalation
Site Entry Safety Gate	Safety check skipped	Partial gate check	Full gate verification	Rigorously enforced gate
Debris & Casualty Triage	Markings ignored	Basic triage applied	Correct INSARAG marking	Flawless triage & extraction
Command Communication	No logs kept	Partial command logs	Active field movement logs	Seamless sector coordination

Evaluation Scoring Guidance: Observer scores should be compiled immediately following the simulation debrief. Scores of 3 or 4 indicate full operational readiness for INSARAG field deployment.

EV3 & EV4 — Facilitator Debrief & References



- INSARAG Guidelines 2020 (International Search and Rescue Advisory Group). Volume II: Preparedness and Response.
- United Nations Office for the Coordination of Humanitarian Affairs (2018). USAR Coordination Cell (UCC) Manual.
- World Health Organization (2015). Emergency Medical Teams: Minimum Standards in Health Action.
- International Federation of Red Cross (2017). Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief.

Digital adaptation note: Each worksheet, ASR decision board, entry gate log, and rubric can be published as an independent web component under WP3. SIM1 is suitable for timed online scenario updates, sector command role selection, and post-simulation reflection.

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