



Battlefield Relevant Civil Information Management (CIM) In Humanitarian Assistance/ Disaster Relief (HADR)

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Role of CA in HADR

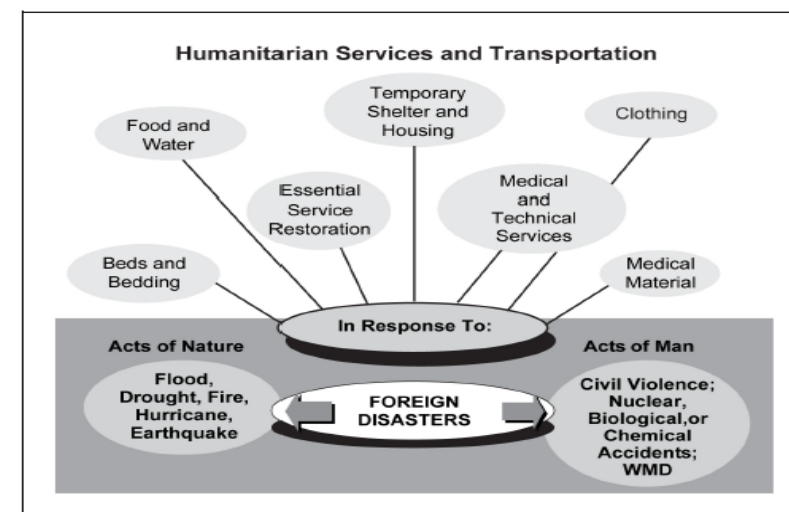


Humanitarian aid (HA) is material or logistical **assistance** provided for **humanitarian** purposes, typically in **response** to **humanitarian** crises including natural **disasters** and man-made **disasters**. The primary objective of **humanitarian aid** is to save lives, alleviate suffering, and maintain human dignity.

Disaster relief (DR) (or emergency **management**) refers to the process of responding to a catastrophic situation, providing humanitarian **aid** to persons and communities who have suffered from some form of **disaster**.

Foreign humanitarian assistance. (FHA) Programs conducted to relieve or reduce the results of natural or manmade disasters or other endemic conditions such as human pain, disease, hunger, or privation that might present a serious threat to life or that can result in great damage to or loss of property.

- Military forces conduct FHA only upon the request of the DOS and in coordination with the COM and USAID
- The military normally plays a supporting role in FHA
- The military provides unique capabilities – specifically rapid logistics and lift capacity



CIM Challenges



Civil Information Management (CIM) Process whereby data relating to the civil component of the operational environment is gathered, collated, processed, analyzed, produced into information products, and disseminated.

* IOT be **battlefield relevant** CIM must provide information to the commander which **materially affects his COAs**.

Academic Challenges with CIM

- Fractal level complexity of social systems
- No consensus within the community as to what “right looks like”; mission diversity necessitates a “Playbook”
- Cultural and Institutional barriers which prevent the NGO/IGO community from participating
- Mission command guidance for CIM is often “murky”
- Scientific methods and processes are required to ensure accuracy
- CIM is rarely a collection priority for supported units
- *Quality of Assessments*

Technical Challenges with CIM

- No Common technical solution
- Secure field access for collection and dissemination
- Majority of the system must be entirely unclassified for partners
- Systems must sift and analyze a large volume of information in real time

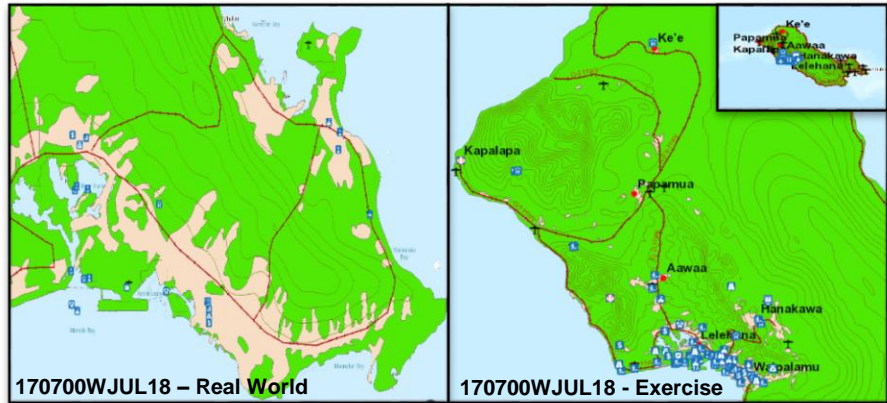




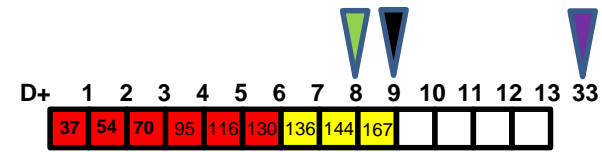
HADR CIM Sample

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RIMPAC FINAL CIM COMPOSITE ASSESSMENT



OVERALL C9 ASSESSMENT



PURPLE: C9 Projected date pre-disaster conditions will be achieved: D+33

GREEN: Transition occurred at: D+8

C9 Functional Specialist Metrics:

- 1. Deaths/ 1000 (PH) (50%>std)
- 2. Water (PH)
- 3. Ports (IN)
- 4. MSRs (IN)
- 5. Power (IN)
- 6. Health Facilities (PH)
- 7. Medical Supplies (PH)
- 8. Hospital Beds Available (PH)
- 9. Infrastructure (IN)
- 10. Airfields (IN)
- 11. Shelter (IN)
- 12. Sanitation (PH)
- 13. Food (EC)
- 14. Police Service (RL)
- 15. Fire Department Services (GO)
- 16. Chaplain (CH)
- 17. Economy (EC)
- 18. Judiciary (RL)
- 19. Governance (GO)
- 20. Schools Open (PE)
- 21. Displaced Civilians (GO)
- 22. Telecommunications (IN)
- 23. Employment (EC)
- 24. Disease Outbreaks (PH)

(Parenthesis indicate lead Functional Specialist Sections responsible for analysis and reporting)

Recommendations / Comments:

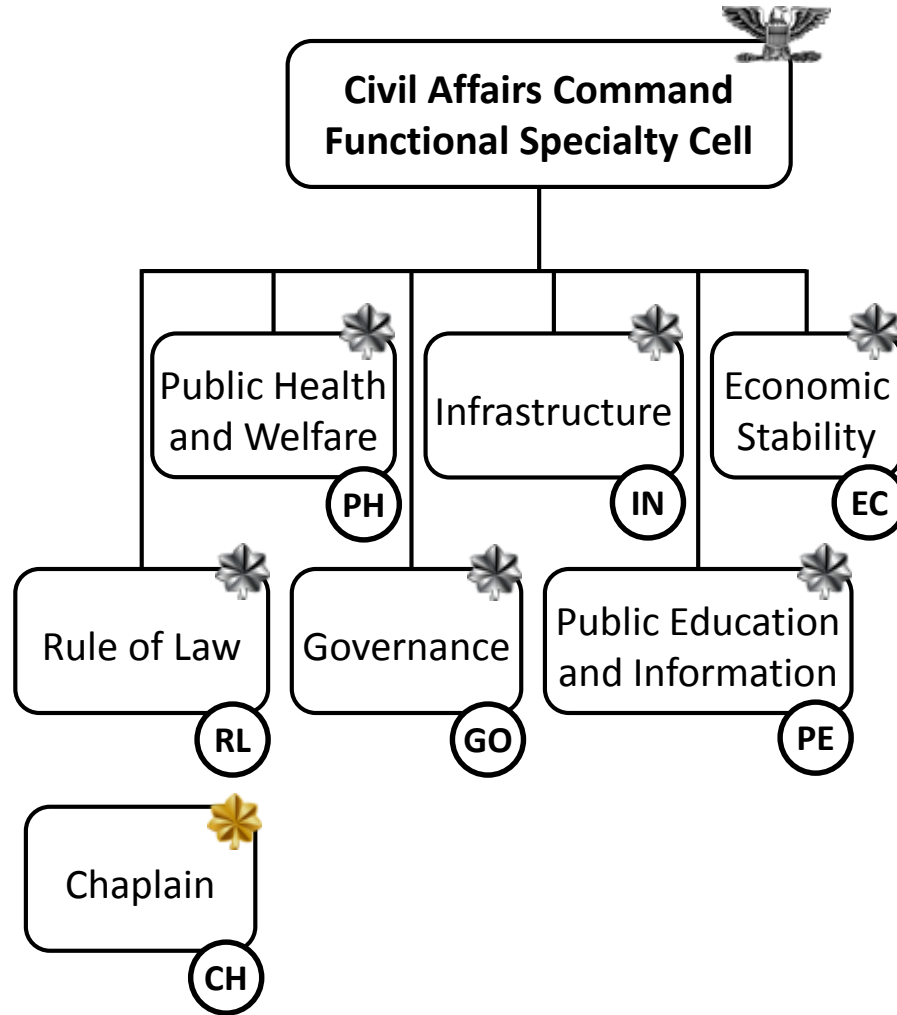
1. **Transition Status** Continuous monitoring across all feeds shows no threats with the potential to impact the ongoing transition
2. **GOG Requirements** HN has accepted transition of all lines of effort and is performing well
3. **RFAs** No new RFAs; 1 ongoing RFA (#1301)
4. **Infrastructure** assess airfields Hanakawa & Oyster Bay open for limited operations. Capacity at Hanakawa equals 5 rotary. Oyster Bay's capacity at 6 fixed wing simultaneously
5. **24/24** SME assessment shows no loss of life in 24/24 assessed metrics



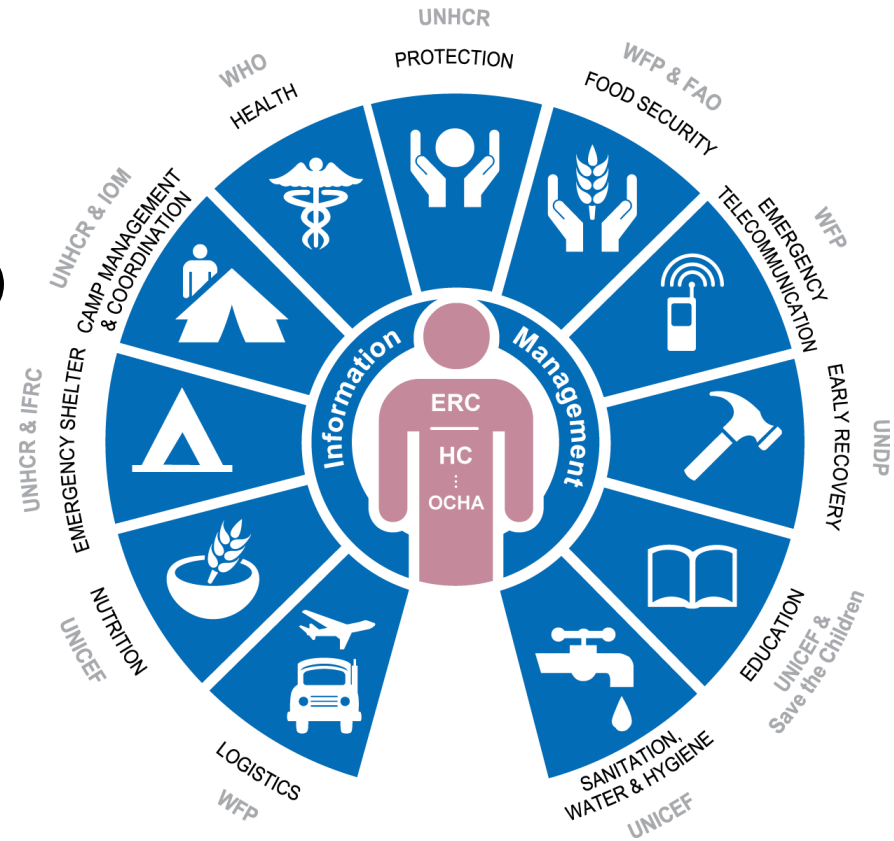
LOE Crosswalk in HADR

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Sphere Project Standards



UNOCHA Cluster System



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LOE Crosswalk in HADR

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2. Water (PH)

12. Sanitation (PH)



3. Ports (IN)

4. MSRs (IN)

10. Airfields (IN)

13. Food (EC)

17. Economy (EC)

23. Employment (EC)



5. Power (IN)

9. Infrastructure (IN)

11. Shelter (IN)

20. Schools open (PE)

22. Telecommunications (IN)



1. Deaths/1000 (PH)

4. Health facilities (PH)

7. Medical supplies (PH)

8. Hospital beds avail. (PH)

24. Disease outbreaks (PH)



12. Displaced civilians (GO)

14. Police service (RL)

15. Fire dept. services (GO)

16. Chaplain (CH)

18. Judiciary (RL)

19. Governance (GO)



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Sphere Example: Water Supply (LOE #2)



Minimum Standards:

Access and water quantity	All people have safe and equitable access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene. Public water points are sufficiently close to households to enable use of the minimum water requirement.
Water quality	Water is palatable and of sufficient quality to be drunk and used for cooking and personal and domestic hygiene without causing risk to health.
Water facilities	People have adequate facilities to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene, and to ensure that drinking water remains safe until it is consumed.

Key Indicators (sample):

- Queueing time at a water source is no more than 30 minutes.
- There are no fecal coliforms per 100ml of water at the point of delivery and use.
- All affected people drink water from a protected or treated source in preference to other readily available water sources.
- Each household has at least two clean water collecting containers of 10–20 liters, one for storage and one for transportation.
- Water collection and storage containers have narrow necks and/or covers for buckets or other safe means of storage, for safe drawing and handling, and are demonstrably used.

OBJ1: Do 90% of the households in the affected area have access to 15L/person/day?

OBJ2: Do 90% of the households in the affected area have access to a water source <= 500m?

OBJ3: Do 90% of the households in the affected area have to wait <= 30 mins for water?

Magnitude	Description
-10	Moderate source contamination/disruption affecting >700k
-9	Moderate source contamination/disruption affecting 500k-700k
-8	Moderate source contamination/disruption affecting 200k-500k
-7	Moderate source contamination/disruption affecting 100k-200k
-6	Moderate source contamination/disruption affecting 50k-100k
-5	Minor source contamination/disruption affecting 20k-50k
-4	Minor source contamination/disruption affecting 10k-20k
-3	Minor source contamination/disruption affecting 5k-10k
-2	Minor source contamination or source disruption affecting 1k-5k
-1	Minor or moderate source contamination or source disruption affecting <1k
1	Water source available <1000 people; small well (1-5000/day)
2	Water source available for 1001-5000 people; medium well(5-10k/day/ other source
3	Water source available for 5001-10000 people; medium well (5-10k)/source, large well (10-25k)
4	Water source available for 10-20k, large well (10-25k), very large source (25-100k)
5	Water source available for 20-50k, water source/distribution 25-50k /(-) minor contamination or source disruption
6	Water source available for 50k-100k, water source/distribution 50k-100k / (-) moderate contamination or source disruption
7	Water source available for 100k-200k, water source/distribution 100k-200k / (-) moderate contamination or source disruption
8	Water source available for 200k-500k, water source/distribution 200k-500k / (-) moderate source contamination or source disruption
9	Water source available for 500k-700k, water source/distribution 500k-700k / (-) moderate source contamination or source disruption
10	Water source available > 700k, water source/distribution > 700k / (-) moderate source contamination or source disruption

Notes:

- If queueing time at the water source is >30 minutes, reduce one level of magnitude.
- Coverage declines in increments of 500m from the nearest water source.
- Shortages are assigned a negative magnitude equivalent to the number served.
- Minor contamination can be treated with boiling or iodine; moderate cannot.

CIM Inputs



INFRASTRUCTURE REPORT 041400JUL2018

Highlight1: Unknown damage level to Government buildings

Highlight2: Unknown damage level to the industrial chemical storage facility IVO Beozors Point

Highlight3: Unknown damage level to various structures throughout all regions and major population/tourist centers (Oyster Bay, Lelehana, and Waipalamu)

Recommendation1: Coordinate with CTF 17, 18 and 19 for in support of area assessments and post assessment reports

Recommendation2: Initiate hasty assessment of various damaged infrastructures in the affected area to determine support requirements for minimal operations

Recommendation3: Coordinate with UN OCHA & MNCC to determine military asset support requirements

OBJ1: > 70% or more major infrastructure such as airports, governmental buildings, hospitals and utilities are minimally operational. = **False**

OBJ2: 50% or more of the water/wastewater treatment systems and distribution lines are minimally operational and online = **False**

OBJ3: Minimal number of damaged commercial buildings and homes have been repaired for habitability. = **False**

Recommended Transition Day: D+ 21

Projected Day Pre-Disaster Conditions: D+ 90

Lives Being Lost? = **True**

1/day →

3/day ↓

Inject Title	MGRS	Magnitude	Range in Km	Duration in Days	LOE	FxSP Lead	FxSP 1	FxSP 2	FxSP 3	Comments
Deaths	4QDJ9416987858	-10	100	10	Deaths / 1000 (PH)	Public Health	Chaplain	Infrastructure	Economy	1500 additional dead; Source: health cluster meeting. They will not verify sources Prior death toll 2000. Accuracy of data questionable.
Number of injured increasing, from aftershock	4QDJ9416987858; 4QDJ8529295811	-10	100	30	Health Facilities (PH)	Public Health	Infrastructure	Governance	Economy	10000 Injured, from after shock 12JUL18; Source health cluster meeting, prior death toll apprx 20000
Adequate Food supply	4QDJ9416987858	2	100	0	Food (EC)	Public Health	Economy	Governance		Source: health cluster meeting: Not forth coming with information. Information condradicts 12JUL 18, reports
Hospitals to shut down in 1 day	4QDJ9416987858	-10	100	30	Health Facilities (PH)	Public Health	Infrastructure	Governance	Rule of Law	Source: health cluster meeting: 1 day fuel remaining to power hospitals. Shut down imminent, in 24 hours, if no fuel delivered.
Widespread diarrhea	4QDJ9416987858	-10	100	30	Disease Outbreaks (PH)	Public Health	Infrastructure	Governance	Rule of Law	Diarrhea outbreak, most likely due to poor sanitation, water borne illness- Cholera maybe a cause



CIM Assessment

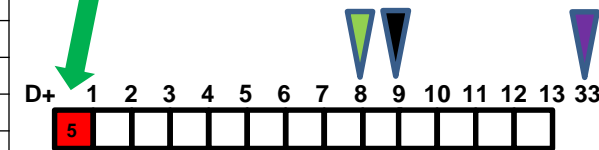
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Sample Data Points:

- 25k contamination= -5
- 50k HADR drop= 6
- 100k well online= 7
- 5k RO system= 2
- 40k canal fixed= 5

Total: 15



Aggregate Score	OBJ Achieved	Rating
1-20	0	Red
21-40	1	Yellow
41-50	2+	Green

OBJ 1: Do 90% of the households in the affected area have access to 15L/person/day? = False

OBJ 2: Do 90% of the households in the affected area have access to a water source <500m? = False

OBJ 3: Do 90% of the households in the affected area have to wait <= 30 mins for water? = False

Lives Being Lost? = False → **2. Water (PH)**

RED indicates lives are being lost and immediate actions need to be taken to minimize loss of life.

AMBER indicates pre-disaster levels of life loss are resumed and immediate life saving efforts are completed, but infrastructure and social normalcy has not been restored to pre-disaster conditions.

GREEN indicates pre-disaster conditions exist.

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The logo of the 351st Civil Affairs Command is circular, featuring a globe with a sword and a torch. The text "BORN OF FREEDOM" is written around the bottom of the globe. The word "UNCLASSIFIED" is written in green above the main title.

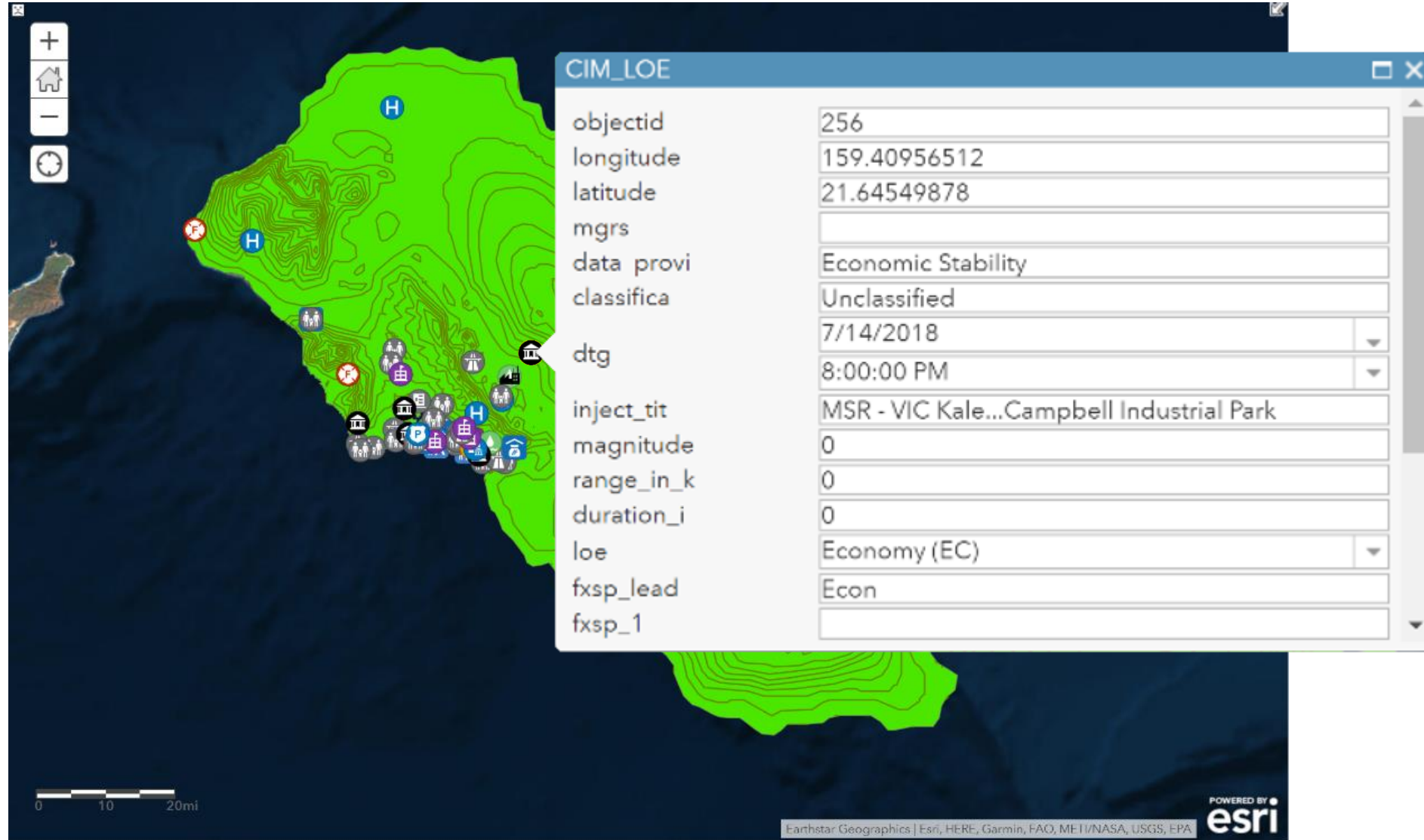
Key Findings (Academics)

1. CIM products provided to the CJTF Commander through the CJ9 proved that military capabilities were no longer required to complete disaster recovery and led to transition for the first time in RIMPAC history
2. CIM models and technology increased CACOM "Conduct CIM" MET assessment from "U" to "T". CIM efforts supported increases in CACOM "Support FHA" MET from "U" to "T" and CACOM "Conduct CMOC Ops" from "U" to "P-". This was accomplished in a joint, combined, environment for the first time in history
3. Command emphasis on CIM and the FxSP → CIM Fusion were essential elements of success
4. The models are scalable for employment at lower echelons
5. Accurate country study information and a sound RFI process is essential for establishing the values contained in the rubrics
6. Net aggregate magnitude by LOE is insufficient to accurately portray LOE status as the numerical system does not account for oversupply in one region and undersupply in another. Heat maps to determine distribution and OBJ assessments to establish system capabilities are crucial additions
7. Value tree analysis should be employed to weight each LOE relative to the mission
8. Individual LOEs should be trended on a graph with a confidence interval
9. Deaths/ 1000 as a derived statistic was not like the other LOEs and could not be assessed the same way or directly actioned– recommend removal as a primary LOE. Also some LOE, e.g. Public Education, are not appropriate for HADR
10. The 24 lines of effort depicted by CIM did not resonate with the United Action Partners who think in terms of sphere standards (MOE) and Requests for Assistance demand signal (MOP). Standardizing CIM outputs to international standards in HADR will increase acceptance and utility of the information.
11. Each CA mission will have different command requirements which will necessitate different rubrics and LOEs. CA will have to produce a "CIM Playbook" which contains models grouped by mission type



All Partners Access Network

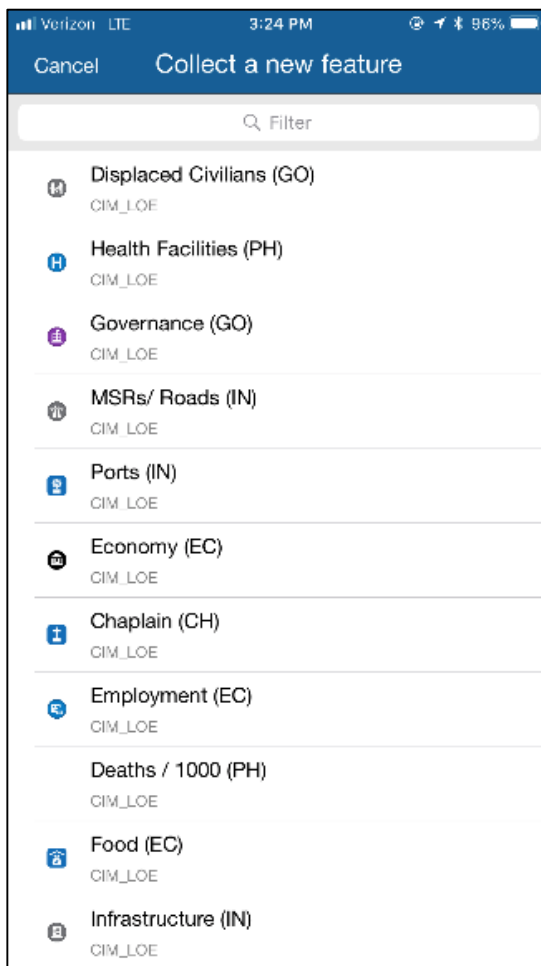
- DOD Website, fully cybersecurity accredited
- US, coalition, OGA, NGOs, IOs, and others can share information and build the Civil Common Operating Picture (COP).
- Built-in ArcGIS capability includes support for fictional maps on real coordinates.
- .org domain, not .mil
- Leaders should collaborate with APAN support teams during planning phases to create data schemas and iconography.



ARCGIS Collector



- APAN's ArcGIS implementation supports the Collector mobile app.
- Data collected in the field can be processed and analyzed in real time remotely.
- Detailed field SITREPs can be immediately viewed in a TOC.
- Once entered in Collector, all information is viewable from APAN Desktop alongside the other entities.



The logo of the 351st Civil Affairs Command is circular, featuring a globe with a sword and a torch. The text "BORN OF FREEDOM" is written around the bottom of the globe. The main title "Key Findings (Technical)" is positioned to the right of the logo.

Key Findings (Technical)

1. The All Partners Access Network (APAN) is an approved DOD Enterprise service which is entirely unclassified and suitable for use by United Action Partners
2. The use of APAN's ARCGIS technology produced an ECOP which provided unprecedented situational awareness in the civil domain to the CJTF Commander
3. ARCGIS Collector updates from maneuver elements populated in the ECOP, complete with imagery, in minutes allowing dynamic re-tasking of field teams while they were still on the objective
4. Limited support from the Defense Information Systems Agency (DISA) led to frequent system outages of up to four hours at a time. One such episode occurred during the visit by the Secretary of the Navy
5. Insufficient system resources in the APAN pilot test server led to periodic system failure and limited both the amount, and type, of data that could be collected
6. Inability of ARCGIS Collector/ APAN interface to automatically extract LAT/LONG and MGRS reduced accuracy of GIS information and led to tedious manual entry on the backend
7. ARCGIS heat map technology was not deployed in the APAN pilot which made it difficult to determine the precise supply/demand state at any given location
8. Inability of the APAN pilot to scale icons by magnitude, or make them stand out, made it difficult for decision makers to spot key information at a glance
9. Inability of the APAN pilot to effectively filter icons by date or produce layers by type limited the usefulness of the product and presents a data management challenge for long term missions
10. GIS tracking on ARCGIS Collector hand held devices presents an electronic signature management issue on the modern battlefield



Questions?

