



## Introduction via Screenshots to **COPPER** (version 0.1, alpha, 13.Sept.2011)

**COPPER** is an integrated system for agencies, communities and companies operating in situations of emergency medical and environmental crisis and criticality including storms, earthquakes and other natural disasters, major accidents, and intentional acts of threat or danger such as terrorism and social disruption.

**COPPER** provides Critical Operations Preparedness and Procedures for Emergency Response through a cohesive, fault-tolerant, rapidly-configurable integration of field and support personnel, light and heavy equipment, medical and life-support resources, CBRNE and Hazmat technology, and comprehensive information and communication systems.

**COPPER** provides for efficient, economical, resilient management, operational continuity, task optimization, safety assurance and project accuracy and reliability in the work that needs to be performed either in advance or deterrence of an emergent critical event such as a potential environmental disaster, or during in-process emergency response and relief, or during the often lengthy and complex post-event sequences of operations for relief and recovery.

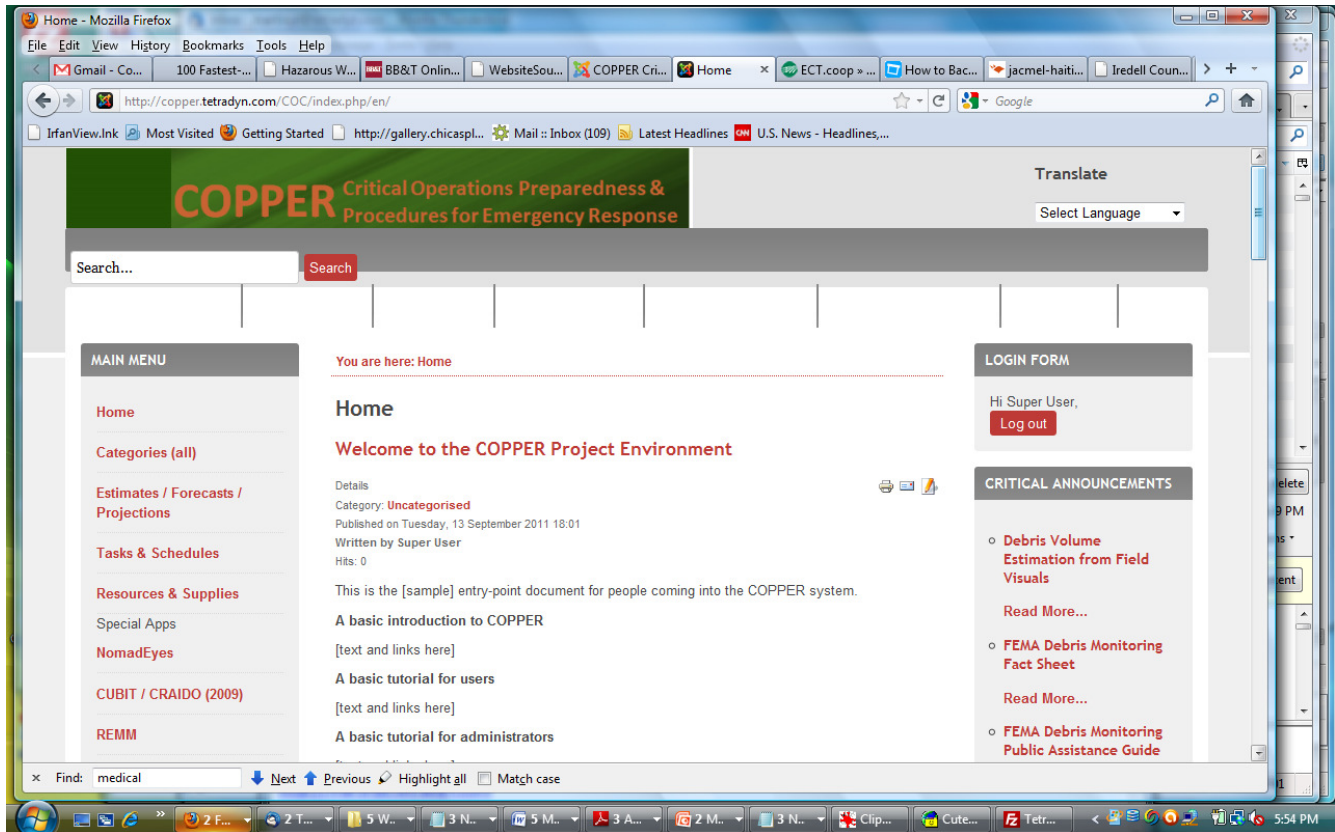
**COPPER** is more than an information system or a network of computing and communication technologies. It involves methodologies and practices, training, financial and management coordination, and the proper, safe, healthy, and secure direction and use of resources and supplies spanning from heavy equipment to clinic and office supplies. It concentrates upon and provides solutions for the types of problems that often emerge during emergency planning, preparedness and response operations, particularly with regard to optimal routing, placement and engagement of personnel, equipment and supplies, and life-critical matters of water, food, medicine, field medical facilities, and the handling of matters involving CBRNE (chem-bio-rad-nuclear-explosive) threats, debris, infectious diseases and pestilence, and social infrastructure instability.

Provided on the following pages are a few snapshots into what is often the most visible and notable component within a complex and multifaceted system as is COPPER, the information technology “front-end” and “main engine.” You will find here a few early-version screenshots from some of the web-based, cloud-based portals and applications that are either directly part of COPPER or potentially useable in different instances. Please note that this is not the formal system design specification document. These are only screenshots of *work-in-progress*. The architecture of COPPER is highly “organic” and highly flexible and malleable, in order to adapt to different operational and environmental requirements. Everything in COPPER can easily be modified to fit the Need – objects, sections, categories, functions, menus, templates, layouts, and different applications.


**COPPER** is designed to be employed on either a per-unique-project basis, with distinctive modifications being made as required, or else in a more comprehensive manner for use on multiple projects that are undertaken by an organization. It is designed in a manner that enables it to be tailored and customized easily for different types of events and projects, and while initially focused on needs within the emergency response sector, COPPER is very much a powerful resource for prevention and deterrence, such as environmental remediation and adaptation, new construction, environmental enhancements and also a variety of energy-supportive, community-building and economy-enhancing developments.

These are only a few screenshots from an alpha stage of the system. There is no substantive content shown - that content depends upon the specific project - nor are many of the individual operational components shown since many require specific, licensed integration and customization. Moreover, most of COPPER is about Action, Operation, and Live, Real-Time Use. For that there are demonstrations, the best of which are through actual field deployments on real projects serving real needs for people, companies and our society.

Screenshots from COPPER, version 0.1, alpha, 13.Sept.2011



**LANGUAGE SWITCHER**



**EDR NEWS FEED**

**Ceres Environmental, Inc.**

Recovery and Restoration Management

- ...**Maria Producing Heavy Rainfall Over Puerto Rico...**  
At 8:00 a.m. EDT, the center of Tropical Storm Maria was located near latitude 21.9 north, longitude 67.9 west, or about 320 miles east of the southeastern Bahamas. Maria is moving toward the north-northwest at about 5 mph.
- ...**Maria Moving Away From Northeastern**

[This central area is where most of the “action” in the COPPER web-portal takes place.

Here are where appear most maps, charts, documents, spreadsheets, database queries, live video feeds, photo gallery collections, shared-video and shared files from teleconference meetings, and many special applications, some of which are purely within COPPER and others of which are pulled-in from external websites that are part of one or more agencies, companies, and other organizations.

For each project, large or small, the content of documents, images, and other tools will change, naturally, but many features will remain constant. Within COPPER, the flexibility is really *supreme*.]

Read more...

- o **Leogane Haiti**  
Read More...
- o **Port-au-Prince, Haiti**  
Read More...
- o **Sample Contact List of Key Field Staff**  
Read More...
- o **Sample LOG of a previous teleconference**  
Read More...
- o **Sample Needs Request**  
Read More...
- o **Sample Notification Announcement for a Future Teleconference**  
Read More...
- o **Sample of IDEAL-generated Site Tour**  
Read More...

The screenshot shows the COPPER web application interface. On the left is a 'MAIN MENU' with various navigation options like 'Home', 'Categories (all)', 'Estimates / Forecasts / Projections', etc. The central area displays 'You are here: Home > NomadEyes' followed by a list of links: Walkers, Sentinels, Warriors, Data Gateways, Live Databases, I3BAT Processes, Advice / Alerts / Actions, Countermeasures, Warehouses, and LUCY Interfaces. The main content is a map of London with various colored lines and markers. On the right is a 'CRITICAL ANNOUNCEMENTS' sidebar with a list of items: 'Debris Volume Estimation from Field Visuals', 'FEMA Debris Monitoring Fact Sheet', 'FEMA Debris Monitoring Public Assistance Guide', 'GPS Locations (Vehicles and/or People)', 'Health and Medicine Apps', 'High-Alert to all Staff', and 'Jacmel Haiti'. Each item has a 'Read More...' link. At the bottom of the page, a URL is visible: http://copper.tetradyn.com/COC/index.php/en/libra...ema-dhs-fema/11-fema-debris-monitoring-f

The screenshot shows the COPPER web application interface displaying an article. On the left is the 'MAIN MENU' with navigation options. The central area shows 'You are here: Home > Apps & Programs' followed by the article title 'Debris Volume Estimation from Field Visuals'. Below the title are details: 'Category: Applications and Programs', 'Published on Wednesday, 14 September 2011 05:35', 'Written by Super User', and 'Hits: 0'. There is a '[SAMPLE / PREVIEW]' section with text: 'This is being developed and shows tremendous potential from the results of research done with a variety of vegetation types. More will be written here soon!'. Below this is a broken image placeholder: '<enter><img src = "http://copper.tetradyn.com/images/software-for-estimating-volume-debris-pile-mess.jpg"></center>'. The 'Subcategories' section lists: 'NomadEyes' (Article Count: 0), 'CEBIT' (Article Count: 0), 'Download App Tools' (Repository of Approved and Validated Downloadable Software Tools, Article Count: 1), and 'Automated Load Validation (ALV)'. On the right is the 'CRITICAL ANNOUNCEMENTS' sidebar with a list of items: 'Debris Volume Estimation from Field Visuals', 'FEMA Debris Monitoring Fact Sheet', 'FEMA Debris Monitoring Public Assistance Guide', 'GPS Locations (Vehicles and/or People)', 'Health and Medicine Apps', 'High-Alert to all Staff', and 'Jacmel Haiti'. Each item has a 'Read More...' link.

Screenshots from COPPER, version 0.1, alpha, 13.Sept.2011

And now for some variety, since people who are working on these projects, and the civilian populations around them, speak many different languages...

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and in places like Haiti, for instance, it can be important to be able to rapidly switch between all sorts of dialects:

The screenshot displays the COPPER website interface. At the top, the header reads "COPPER Critical Operations Preparedness & Procedures for Emergency Response" with a "Haitia" dropdown menu. Below the header is a search bar with a "Search" button and a "TRACK / JWENN" button. The main content area features a breadcrumb trail: "Ou la a: Kay > Track / Jwenn > Annoncements kritik > High-Alèt nan tout Anplwaye". The article title is "High-Alèt nan tout Anplwaye". The article text includes metadata such as "Detay", "Kategori: Annoncements kritik", "Published nan Madi, 13 Septanm 2011 12:47", and "Written by User Super". The main text discusses the importance of having a backup plan for critical operations, mentioning "alèt segondè" (secondary alert) and the need for a "plan B" in case of a primary system failure. A map of Leogane, Haiti, is shown with a grid overlay. The URL for the map is provided: "http://www.lib.utexas.edu/maps/topo/haiti/leogane-haiti-tlm50-57714.pdf". Navigation buttons for "< Prev" and "Next >" are visible. A sidebar on the left contains a "MAIN MENU" with various categories like "Key", "Categories (tout)", "Estimasyon / Forecasts / Projections", "Travay & orè", "Resources & Pwodwi pou", "Apps Espesyal", "NomadEyes", and "Pye edmi / CRAIDO (2009)". A sidebar on the right contains "ANONS KRITIK" with several items like "Debri Volin soti nan jak", "FEMA Sivey debri Fèy", "FEMA Sivey debri Asist", and "GPS Lokal (oswa Moun".

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COPPER can also deal with biothreats of the most severe (level-4) types, as well as with radiation threats and actual nuclear disasters such as Chernobyl and Fukushima or chemical disasters such as Bhopal:

### Dose Estimator for Exposure: 3 Biodosimetry Tools

[Define biodosimetry](#) | [More about biodosimetry](#) | [What is exposure?](#) | [About this tool](#) | [Credits](#) | [Disclaimer](#)



Video Tutorial (2:33)

Time to Onset of Vomiting	Lymphocyte Depletion Kinetics	Dicentric Chromosome Assay
<p><b>Warning</b></p> <p><a href="#">Background</a>   <a href="#">Illustrations</a>   <a href="#">References</a></p> <p>1. Date/time exposure began  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/>                      (e.g., 01/22/2008, 14:25)</p> <p>2. Date/time vomiting began  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/></p> <p>3. <input type="button" value="Estimate dose"/> from exposure</p> <p>4. Dose estimate <input type="text" value="Gy"/> <a href="#">95% confidence limits</a> <input type="text" value="Gy"/></p> <p>5. <input type="button" value="Suggest treatment"/></p>	<p><b>Warning</b></p> <p><a href="#">Background</a>   <a href="#">Illustrations</a>   <a href="#">References</a></p> <p>1. Date/time exposure began  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/>                      (e.g., 01/22/2008, 14:25)</p> <p>2. Date/time of <b>one or more</b> blood counts  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/>  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/>  <input type="text" value="mm/dd/yyyy"/> <input type="text" value="00:00"/>                      (e.g., 01/22/2008, 23:00)</p> <p>lymphocyte count (x 10<sup>9</sup>) <input type="text" value=""/>  <input type="text" value=""/>                      (e.g., 1.25)</p> <p>3. <input type="button" value="Estimate dose"/> from exposure</p> <p>4. Dose estimate <input type="text" value="Gy"/> <a href="#">95% confidence limits</a> <input type="text" value="Gy"/></p> <p>5. <input type="button" value="Suggest treatment"/></p>	<p><b>Warning</b></p> <p><a href="#">Background</a>   <a href="#">Illustrations</a>   <a href="#">References</a></p> <p>To estimate radiation dose, the Dicentric Chromosome Assay should be performed in a <a href="#">reference laboratory</a>.</p>

### Time/Dose Effects in Acute Radiation Syndrome - Acute Clinical Effects of Single-Dose Exposure of Whole-Body Irradiation (5.3 - 8.3 Gy)

[Print this page](#)



Video Tutorial (2:02)

**Dose Range in gray (Gy)**  
(What is gray?)

- [0 to 0.75](#)
- [0.75 to 1.5](#)
- [1.5 to 3](#)
- [3 to 5.3](#)
- **5.3 to 8.3**
- [8.3 to 11](#)
- [11 to 15](#)
- [15 to 30](#)
- [30 to 45](#)
- [Summary](#)
- [Caveats and comments](#)

#### Symptoms/Signs for Dose Range 5.3 to 8.3 Gy in Free Air

Symptoms/Signs	Hours						Days							Weeks						
	4	8	12	16	20	24	2	3	4	5	6	7	2	3	4	5	6	7		
Nausea	90-100%						90-100%							60-100%						
Vomiting (retching)	80-100%						80-100%							60-100%						
Anorexia	100%						100%							100%						
Diarrhea (cramps)	~10%						60-100%							60-100%						
Fatigue	90-100%						90-100%							90-100%						
Weakness	90-100%						90-100%							90-100%						
Hypotension																				
Dizziness														60%						
Disorientation														60%						
Bleeding							(a) 50-100%							50-100%						
Fever							(b) 60-100%							60-100%						
Infection							(c) 60-100%							60-100%						
Ulceration							(d) 50%							50%						
Fluid loss/electrolyte imbalance							40%							(e) 30%						
Headache							50%							50%						
Fainting														50%						
Prostration														60%						
Death														50-90%						

**Severity Scale**

 mild to moderate	 moderate to severe
 unspecified or mild	 severe

Colors used to improve visualization only.

Screenshots from COPPER, version 0.1, alpha, 13.Sept.2011

With the **CUBIT** (Coordinated Unified Biothreat Intervention and Treatment) and specifically the **CRAIDO** (Comunity Rapid-Response for Infectious Disease Outbreaks) component-systems and their mobile hardware and instruments accessible and manageable through **COPPER**, there is an efficient, economical, reliable and resilient way to prepare for and respond to the dangers of epidemics and pandemics involving a wide variety of biothreats, to biowarfare and terrorism, and to the dangers of pestilence and public health disasters from the consequences of earthquakes, floods, hurricanes, tornados, and other disruptions to the food and water supply-chains and their integrity.

The screenshot displays the COPPER web application interface. At the top, a breadcrumb trail reads "Home >> Maps >> Epidemiology >> Map # 2". The main content area is divided into several sections:

- Main Menu:** A blue-bordered box containing links for Home, Alerts, Findings, Indicators, Forecasts, Maps (with sub-links for CRAIDO Nodes, Epidemiology, and Resources, Supplies, Needs), CRAIDO Post-It Page, CUBIT - CRAIDO Public Portal, and News Feeds.
- Latest Items:** A list of recent updates, including "Output, CRAIDO, dd.mm.yy - MADIT indicators of mutation H1N1-2009(b)", "output from CRAIDO on location of mutant strain H1N1+x", "Output from query on locations of new H1N1-mod2 samples", "Map # 2", and "Map # 1".
- Map # 2:** A map of Zoetermeer, Netherlands, showing a blue route. The map includes a toolbar with options like "lite", "Hybrid", "Terrain", and "Earth", along with navigation controls. Labels on the map include "Zoetermeerse Plas", "Benthuizen", "N20", "E30", and "A12".
- Login:** A section with fields for "Username" and "Password", a "Remember Me" checkbox, and a "Login" button. Below the fields are links for "Forgot your password?", "Forgot your username?", and "Create an account".
- Most-Read Items:** A list of frequently accessed content, including "output from CRAIDO on location of mutant strain H1N1+x", "Map # 1", "Map # 2", "Output, CRAIDO, dd.mm.yy - MADIT indicators of mutation H1N1-2009(b)", and "Output from query on".

Additional elements include a "MultiTrans15v33" section, a "Google Translate" widget with a "Select Language" dropdown, and a "Sections" area with links for "Indicators" and "Maps".

**COPPER** can also provide an extensive suite of tools for modeling, simulation, forecasting, prediction, and in both live-operational and advance-training modes. **COPPER** is also designed to address the needs and the opportunities for collaborative, integrated community-based relief processes - such as improving the supply and distribution of water, food, shelter, clothing, fuel and medicine – in concert with, in synchronization with, and in a minimization of disruption or confusion to or by various groups and forces operating in a crisis or emergency situation. There are many ways in which, for instance, debris removal and demolition can be organically coupled and linked to provide often badly-needed services and resources for the distribution of needs to a disaster-hit community.

**Note Carefully, Please!** **COPPER** is not something in an R&D phase, still needing months or years of development and testing. Its principal components and resources are fully ready for deployment Today, in any type of operating environment. And everything is based upon rigorous project management and operational deployment standards, following the **COPPER**-team's motto: **ACCORD** – to be Accurate, Consistent, Complete, On-time, Reliable, Defensible.

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**COPPER** Critical Operations Preparedness & Procedures for Emergency Response

Search...

Search...

**MAIN MENU**

- Home
- Categories (all)
- Estimates / Forecasts / Projections
- Tasks & Schedules
- Resources & Supplies
- Special Apps
- NomadEyes
- CUBIT / CRAIDO (2009)
- REMM
- Relief Center Ops (proto)

You are here: [Home](#) > [NWS Models](#) > [NWS Practice Simulator](#)

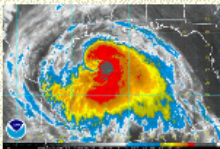
[< to top](#)

Scoring	
Severe Thunderstorm Warning (SVR)	Tornado Warning (TOR)
Issuing a SVR costs 2000 points plus 50 points for every minute the warning is in effect	Issuing a TOR costs 4000 points plus 50 points for every minute the warning is in effect
A SVR verified by hail damage earns 10,000 points plus 100 points per minute of leadtime	A TOR verified by hail damage earns 10,000 points plus 100 points per minute of leadtime
A SVR verified by wind damage earns 10,000 points plus 100 points per minute of leadtime	A TOR verified by wind damage earns 10,000 points plus 100 points per minute of leadtime
A SVR verified by a tornado earns 2,000 points plus 50 points per minute of leadtime	A TOR verified by a tornado earns 20,000 points plus 200 points per minute of leadtime
Wind damage or hail where no warning was issued is a miss and costs 10,000 points	A tornado where no warning was issued is a miss and costs 20,000 points

[< to top](#)

**CRITICAL A**

- Debris Ve  
Estimatic  
Visuals  
[Read Mo](#)
- FEMA Del  
Fact Shec  
[Read Mo](#)
- FEMA Del  
Public As  
[Read Mo](#)
- GPS Loca  
and/or Pe  
[Read Mo](#)
- Health ar  
Ann  
[Read Mo](#)



# CLEARINGHOUSE Relief Center

**Relief Networking Clearinghouse Services**

**Methods**

**FIND PEOPLE**

**FIND RESOURCES You Need**

**FIND NEEDS for What You Can Give**

**Contact**

**Public BlogSite Read & Share**

**LEARN MORE Portals & Tools**

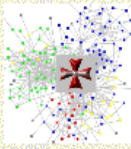
**TETRADYN Prime Sponsor**

**IIS Main Vehicle**

## FIND RESOURCES

This is what to do:

- Go to **The CLEARINGHOUSE EXCHANGE PORTAL** - once it is set up it will be a rich and easy info-resource (we hope by 7.Apr.09)
- In the meantime, just tell us what you Need, and why, and when, and how you can receive it, and get it to us - see the CONTACT page here.
- Or else call us by phone - again, go to the CONTACT page here.
- We will do our best to connect what You Need with Those who have something to offer in goods, services, temporary housing, transportation, medical supplies, food, etc.
- That's it for now - everything is just getting started so be patient and don't expect this will be a smooth web portal with no glitches!
- Thanks. Remember, this is all pro bono, coming from a very few people who are



## A Relief Center

**Providing a Clearinghouse for Information and Connections to Help People Get Reconnected and Find Resources**

Screenshots from COPPER, version 0.1, alpha, 13.Sept.2011

**COPPER** is constantly growing and evolving to meet the needs of the world and those who work to make it a better and more safe, healthy and livable environment for our families and communities. There are new optimizations and improvements in development and coming on-line and these include some that are remarkable new or modified applications or re-use of existing, proven technologies and systems (e.g., for tracking, locating, routing, fuel/vehicle/staff optimization, hauling-load measurement and validation (debris or supplies), water quality, food safety, hazmat-avoidance, civilian danger minimization, and estimation/forecast tasks both in advance and after a major event such as an earthquake or mega-storm. Some features are being put to the test in both “beta” and “alpha” levels of completion because, in fact, as any knowledgeable and experienced engineer or equipment operator or health care provider knows, the best way to refine the methods and the tools is through *seeing and doing and using*, and to do so always with a flexible, open, *think-outside-the-box* mentality.

Thus, COPPER can employ, right now, such a complementary and collaborative diversity of techniques and tools as:

- Micro-helicopter (remote-operation, radio-controlled, wi-fi connected with the internet) surveillance and estimation of potential damage, debris concentrations and volumes, flooding, fire-threats, evacuation-route statuses, and more
- Bicycle-based performance of the same types of tasks (using both mountain-bikes and new wind-assisted “wikes”)
- Automated and AI (artificial intelligence) assisted tracking and locating and estimating of future position and timing for people, vehicles, special equipment, supplies
- Automated load calculation and verification of hauling-truck loads (debris and refuse, or material and supplies)
- The most accurate and rapid field-tested deployments of sensors, detectors, monitors, and analytical instrumentation for identification and tracking of IDLH (immediate danger to life and health) chemicals, biological agents, and radioactive substances
- The most effective suite of rapid-deployment shelters for emergency habitation, offices, storage of supplies including large machines and vehicles including oversize trucks and earth-moving equipment
- Seamless fault-tolerant messaging including fall-back and alternate team notifications, using SMS, voice, and video, for staff that need to be notified, redirected, placed out of danger, sent to new assignments
- And more, where the “what is more?” depends upon What You and We Need Now for the Task at Hand.

And finally, in conclusion for this introduction to the industry-changing, environment-enhancing, life-saving, people-benefiting world of **COPPER** ...

Consider that you never know where, with all the changes in our world now and coming ahead, the next important, critical, emergent project will be! So it is best to be enabled and empowered with the best resources for rapid deployment of good human-to-human communication and language tools as well in whatever we do!

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So... don't let anyone say it can't be done smoothly, efficiently, quickly, economically and elegantly.