

**HGAC 2015 DISASTER DEBRIS WORKSHOP SERIES**  
**WORKSHOP 4: ADVANCED TECHNOLOGY IN DISASTER DEBRIS MANAGEMENT**

**US Army Corps of Engineers**  
**Automated Debris Management System**  
**Specification Requirements**

Element	Specifications
1. Load Ticket	System must, at a minimum have the following attributes: a. Allow creation of point of origin load data only when position is known and credentials have been authenticated b. Automatically record date and time and other relevant point of origin data c. Systems writes point of origin load data using encrypted storage algorithms d. Records Right Of Entry or work order number e. Documents ticket/tower personnel credentials with point of origin load data f. Acknowledge successful data capture g. Record digital images of debris, location, and / or other images selected by user
2. Database	System must have duplicate databases for internet and government use.
3. Manually Entries	Only two elements of the traditional debris paper load ticket (debris type and load call) are manually entered.
4. Direct Haul Route	System must use GPS & GIS technologies to automatically determine the most direct haul route from loading site to disposal site and records mileage.
5. Daily Reports	System must provide evaluation of daily event status, production information, and performance information using web-based reporting, off the shelf software, and GIS tools.
6. Database Integration	Coordination of contractor invoices, FEMA documentation and applicant payment processes must be enabled through an integrated database management system.
7. Ticket/Tower Applications	System must, at a minimum have the following attributes: a. Ticket/tower monitor electronic registration b. Generate, document, track, and manage unique encrypted identification data for employed personnel c. Link designated ticket/tower personnel roles to a specific mission d. The ability to edit ticket/tower personnel roles i.e., create, update and delete e. Assign and track equipment used in debris hauling and reduction f. Store ticket/tower personnel contact information relative to the mission g. Track and Manage ticket/tower personnel role and status h. Reject invalid ticket/tower personnel credentials i. Reject invalid certification credentials
8. Truck Certifications	System must, at a minimum have the following attributes: a. A means of electronically registering authorized debris contractor vehicles and equipment b. Link electronic registration to digital images c. Identify mission and governmental entity d. Document and record unique identification data for contractor vehicles and equipment e. Utilize uniform measurements e.g. feet and inches f. Capture vehicle volume g. Utilize industry standard equations for all volume calculations h. Capture drivers and certification team member unique identification number

**WORKSHOP HANDOUT**  
**USACE ADMS SPECIFICATION REQUIREMENTS**

Element	Specifications
	<ul style="list-style-type: none"> <li>i. Recertify vehicles</li> <li>j. Recertified vehicles must be recorded in an audit table</li> <li>k. Certification data must be associated to authorized system user</li> <li>l. Reject vehicles which are not associated with current event and applicant</li> <li>m. Capture vehicle audit records</li> <li>n. Create a printed certification record</li> <li>o. Administrative reporting capabilities</li> </ul>
9. Disposal Site Management Application	<p>Completed Right of Way (ROW), Right of Entry (ROE) and Per-unit point of origin transactions must be received at the approved disposal site. At a minimum, the disposal site management application must provide the capability to:</p> <ul style="list-style-type: none"> <li>a. Accept site configuration data at the beginning of each work day</li> <li>b. Dynamically configure receiving application based on site configuration data</li> <li>c. Display certification data and photo for ticket/tower personnel to perform a field audit of truck/trailer to assure they matches certification and placard number</li> <li>d. Designate debris type</li> <li>e. Record debris volume (based on unit of measure for the contract task order)</li> <li>f. Identify original load data and create hard copy</li> <li>g. Create load data record in internal storage</li> <li>h. Create backup copy of internal storage</li> <li>i. Continuously calculate and present real-time disposal site statistics</li> <li>j. Re-print load ticket data</li> <li>k. Preserve in its original state, then transmit daily transaction data</li> <li>l. Associate ticket/tower personnel credentials with each received load</li> </ul>
10. Field Administrative Applications	<p>The system must perform administrative duties, verify vehicle audit information, display real-time collection volumes, and review ticket/tower personnel GPS audit logs. At a minimum, the field administrative applications must provide the capability to:</p> <ul style="list-style-type: none"> <li>a. Change ticket/tower personnel identification roles and responsibilities</li> <li>b. Review total CY counter value</li> <li>c. Audit vehicle certification data</li> <li>d. Validate/Invalidate equipment and personnel</li> <li>e. Reinitiate security sequence for ticket/tower personnel</li> <li>f. In tabular format, display the results of ticket/tower GPS audit files by limiting access to the internet data or by the government secure server</li> </ul>
11. Data Consolidation Applications	<p>Transactional data must be summarized, validated, presented and audited to provide an overall status of mission performance. The Data Consolidation applications must facilitate billing, error reporting, performance tracking and graphical data preparation. At a minimum, the Data Consolidation tools must provide the capability to:</p> <ul style="list-style-type: none"> <li>a. Accept transactional data sets from multiple debris location systems</li> <li>b. Recognize multiple mission/applicant configurations</li> <li>c. Grant access to authorized authenticated users or processes</li> <li>d. Contain a master record of: <ul style="list-style-type: none"> <li>i. Roles and responsibilities</li> <li>ii. Ticket/tower personnel credentials and other data</li> </ul> </li> </ul>

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Element	Specifications
	<ul style="list-style-type: none"> <li>iii. Certification credentials and other data</li> <li>iv. Mission data</li> <li>v. Applicant data</li> <li>vi. Geospatial data               <ul style="list-style-type: none"> <li>1. Street centerlines</li> <li>2. County outlines</li> <li>3. Population and demographic</li> <li>4. Elevation</li> <li>5. Wetlands delineation</li> <li>6. Historic and Environmentally Sensitive areas</li> <li>7. Debris work zones</li> <li>8. Parcel data</li> <li>9. Land use</li> <li>10. FEMA flood zones</li> </ul> </li> <li>e. Thematic mapping techniques to distinguish different data by color and/or symbol</li> <li>f. Identify data attributes for a single point of data</li> <li>g. Select one or many points of data</li> <li>h. Calculate operational efficiency statistics such as:               <ul style="list-style-type: none"> <li>i. Trip turnaround time</li> <li>ii. Trip distance to disposal site (straight line projection)</li> <li>iii. Average container fill percentage</li> <li>iv. Average tower manager load call</li> <li>v. Load call trend data e.g., by tower managers, contractor, sub-contractor, driver, etc.</li> </ul> </li> <li>i. Multiple data selections generate tabular data reports</li> <li>j. Filter mechanisms to highlight geospatial data</li> <li>k. Role based security</li> <li>l. Prevent distributed data from being reprocessed for billing purposes</li> <li>m. Identify billing data sets based on parameters such as:               <ul style="list-style-type: none"> <li>i. Time/Date</li> <li>ii. Contractor/Subcontractor</li> <li>iii. Debris type                   <ul style="list-style-type: none"> <li>i. Debris disposal method (haul-in, reduction, open burn, incineration, haul-out, leave in place, etc.)</li> </ul> </li> <li>ii. Haul distance</li> </ul> </li> <li>n. Prevent modification to original data by unauthorized or unauthenticated users</li> <li>o. Insert audit records for modifications to original data by authorized, authenticated users</li> </ul>