Pipeline and Hazardous Materials Safety Administration

HM-ACCESS Initiative

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H–azardous

M–aterials

A–utomated

C–argo

C–ommunication for

E–fficient and

S–afe

S–hipments

Background

Purpose: To identify and eliminate barriers to the use of paperless hazard communication technologies to improve the delivery of critical hazardous materials (HM) safety information throughout the transportation chain.

2008:   HM-ACCESS initiative was established.

2009:   PHMSA's Office of Hazardous Materials Safety (OHMS) held a public meeting to discuss the purpose and objective of this initiative.

2011 (Sept):   PHMSA's OHMS established an Interagency Agreement with the Volpe National Transportation Systems Center (US DOT, RITA).

Background (continued)

Current HM communication remains a p<u>aper-based system</u>, which has limitations in regards to:

- ➤ **Hazard communication to emergency responders:**
  - **Papers may not be available,** due to papers being destroyed or a responder's inability to approach a transport vehicle involved in the incident.
  - **Papers may be in error**, resulting from transcription errors and handwriting interpretation mistakes.

- ➤ **Mishandling of hazardous materials** resulting from discrepancies in paperwork and/or incorrect/missing information.

- ➤ **Increased storage time** due to time delays associated with the physical transfer of the shipping paper document.

Purpose

Electronic communication of hazard information will:

- ➤ Improve communication to emergency responders;

- ➤ Reduce overall risk;

- ➤ Reduce intermodal impediments;

- ➤ Reduce congestion and improve system reliability;

- ➤ Enhance the security of imported materials; and

- ➤ Reduce environmental impacts.

5

Purpose (continued)

➢ The HM-ACCESS research initiative **will not replace** existing HM shipping paper requirements or HM communication requirements.

➢ The intent of this research initiative is to identify and evaluate options to complement existing regulatory requirements for HM shipping papers to **allow** for electronic-HM (e-HM) communication.

➢ Addresses key aspects of "Hazardous Materials Transportation Safety Improvement Act of 2011" (_Senate Bill S.1952, Section 6: Paperless Hazard Communications Pilot Program_).

Senate Bill S.1952

Paperless Hazard Communications Pilot Program (Section 6)

➢ Conduct pilot projects to evaluate the feasibility and effectiveness of using paperless hazard communications systems.

➢ May not waive requirements under 5110 of Title 49.

➢ Consult with organizations (fire service, law enforcement, emergency response providers, persons who offer HM for transportation, persons and employees who transport HM).

➢ Report status no later than two years after the date of enactment.

Objectives

Three primary HM-ACCESS objectives:

➢ <u>Validate the transportation system requirements</u> necessary to demonstrate the feasibility and functionality of implementing e-HM communication;

➢ <u>Determine the regulatory performance requirements</u> needed to ensure an e-HM communication system provides a level of safety at least equivalent to the current paper-based communication process; and

➢ <u>Identify a transportation system platform to test/validate the facilitation</u> of e-HM communication, supplementing existing HM communication requirements.
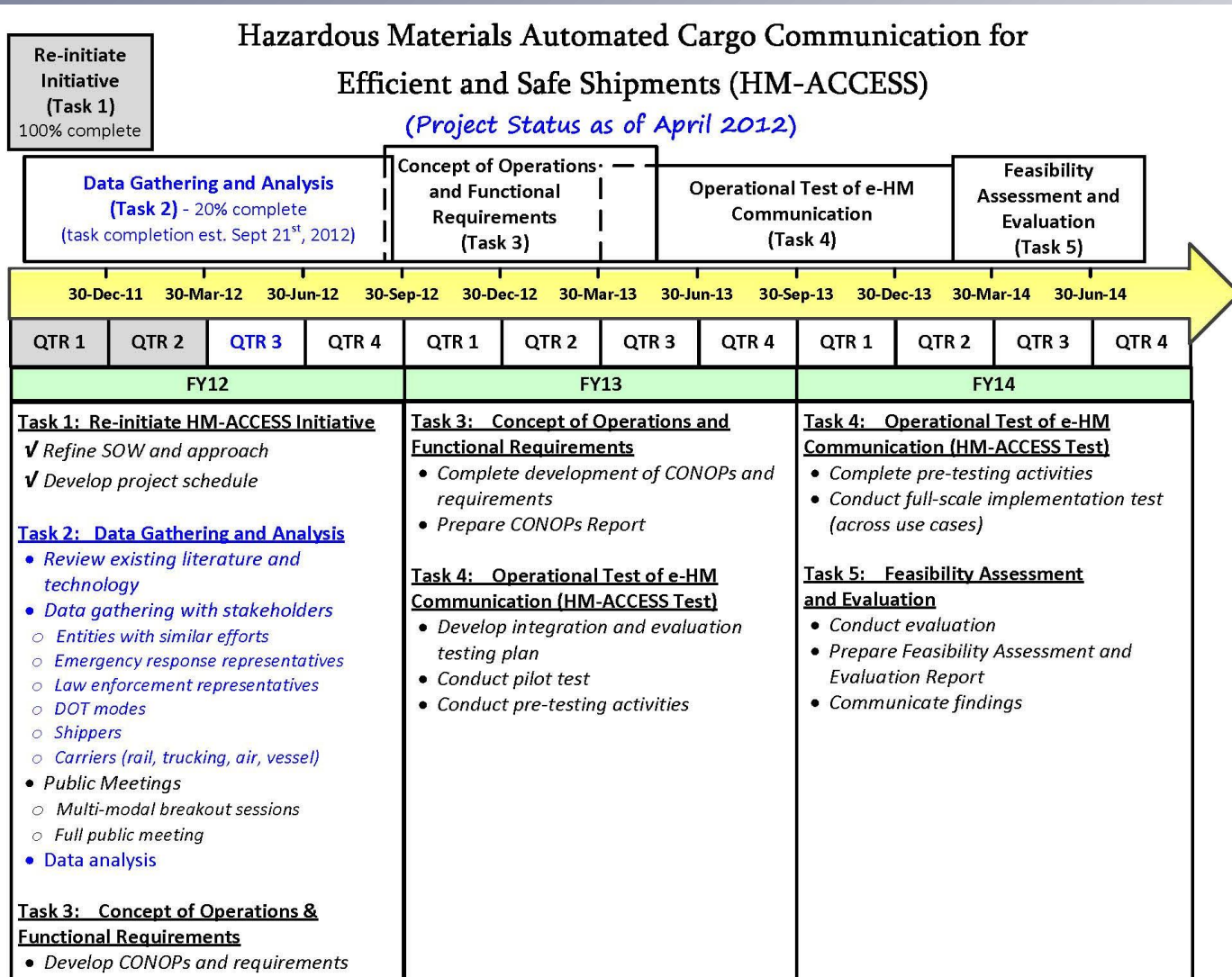
Statement of Work

Task 1: Re-initiate HM-ACCESS by refining the statement of work, project approach, timeframes and developing a comprehensive project schedule.

Task 2: Assess the current capabilities and operational requirements to facilitate e-HM communication, by conducting data gathering activities with stakeholders in conjunction with literature and technology reviews.

Task 3: Develop a concept of operations and system functional requirements, based on the information obtained during Task 2.

Task 4: Develop and implement an operational test of the concept of operations developed in Task 3.

Task 5: Prepare a feasibility assessment and evaluation report for allowing the use of e-HM communication, based on the Tasks 2-4 results.

Proposed Timeline

Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipments (HM-ACCESS)

(Project Status as of April 2012)

Re-initiate Initiative (Task 1) — 100% complete

Data Gathering and Analysis (Task 2) - 20% complete (task completion est. Sept 21st, 2012)	**Concept of Operations and Functional Requirements (Task 3)**	**Operational Test of e-HM Communication (Task 4)**
		Feasibility Assessment and Evaluation (Task 5)

30-Dec-11	30-Mar-12	30-Jun-12	30-Sep-12	30-Dec-12	30-Mar-13	30-Jun-13	30-Sep-13	30-Dec-13	30-Mar-14	30-Jun-14

QTR 1	QTR 2	QTR 3	QTR 4	QTR 1	QTR 2	QTR 3	QTR 4	QTR 1	QTR 2	QTR 3	QTR 4
FY12				FY13				FY14			

Task 1: Re-initiate HM-ACCESS Initiative
- √ Refine SOW and approach
- √ Develop project schedule

Task 2: Data Gathering and Analysis
- Review existing literature and technology
- Data gathering with stakeholders
  - Entities with similar efforts
  - Emergency response representatives
  - Law enforcement representatives
  - DOT modes
  - Shippers
  - Carriers (rail, trucking, air, vessel)
- Public Meetings
  - Multi-modal breakout sessions
  - Full public meeting
- Data analysis

Task 3: Concept of Operations & Functional Requirements
- Develop CONOPs and requirements

Task 3: Concept of Operations and Functional Requirements
- Complete development of CONOPs and requirements
- Prepare CONOPs Report

Task 4: Operational Test of e-HM Communication (HM-ACCESS Test)
- Develop integration and evaluation testing plan
- Conduct pilot test
- Conduct pre-testing activities

Task 4: Operational Test of e-HM Communication (HM-ACCESS Test)
- Complete pre-testing activities
- Conduct full-scale implementation test (across use cases)

Task 5: Feasibility Assessment and Evaluation
- Conduct evaluation
- Prepare Feasibility Assessment and Evaluation Report
- Communicate findings

LEGEND: Blue font indicates on-going task, "√" indicates a completed sub-task, Grey shading indicates a completed task or QTR

Task 2—Data Gathering

**Identify and analyze current operation and technical solutions.**

➢ Identify minimum information immediately needed by emergency personnel and law enforcement.

➢ Identify/analyze current electronic data standard development efforts.

➢ Identify/analyze current operational and technological solutions.

➢ Identify gaps and vulnerabilities associated with incorporating e-HM communication into the HM transport environment.

Task 2—Data Gathering (cont.)

Communication with stakeholders is essential to success.
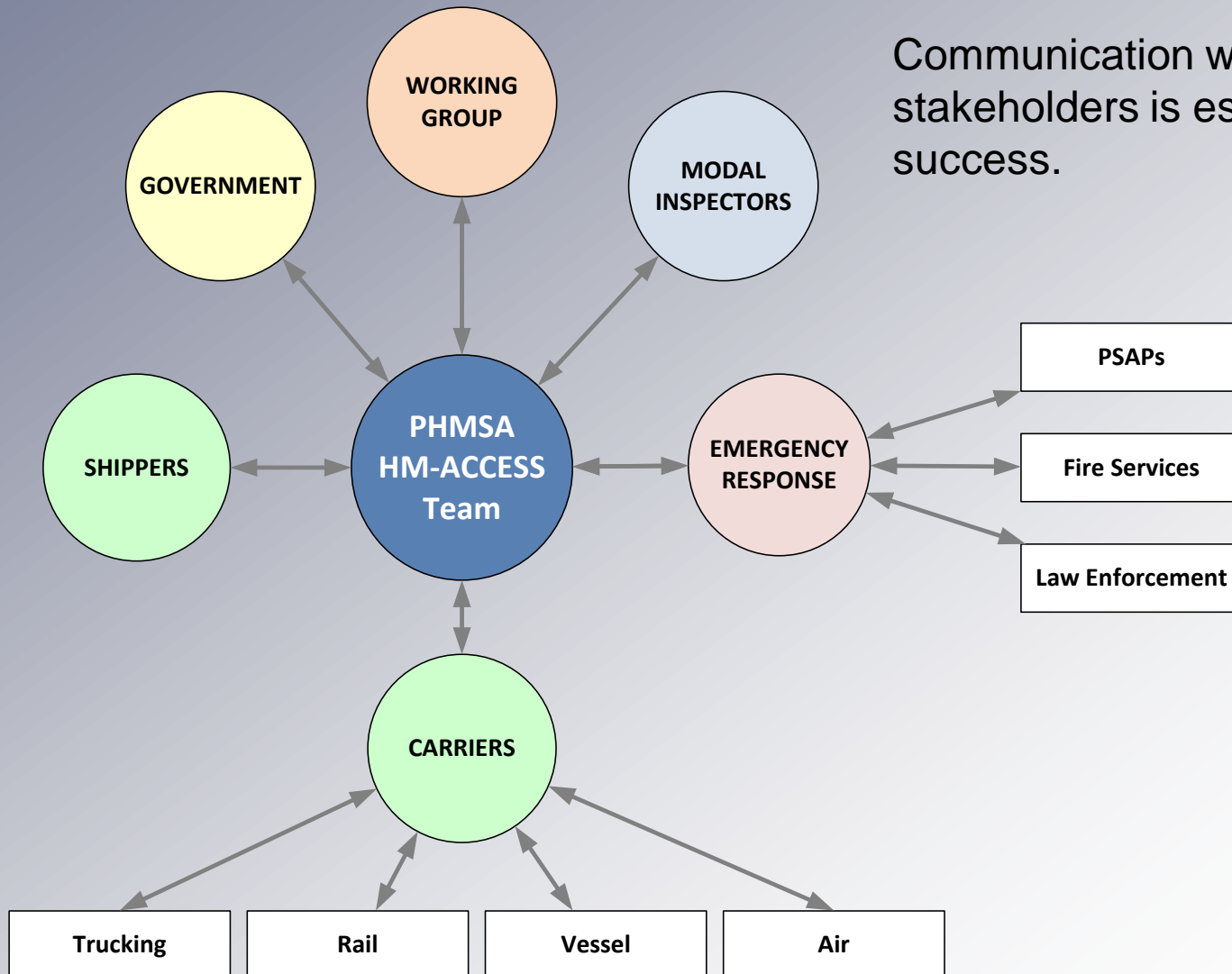
Task 2—Data Gathering (cont.)

Stakeholders contacted to-date:

- **Government:** FAA, FRA, USCG, FMCSA, DOE, DOD, EPA
- **Emergency Response**: APCO, PSAPs (6), Hazard Response Units (2), IAFF, NVFC, NAFTD, IAFC, NFPA 472 Committee
- **Modal Inspectors:** CVSA
- **Carriers-Air:** IATA
- **Carriers-Trucking:** ATA
- **Carriers-Vessel:** VOHMA
- **Carriers-Rail:** AAR, ASRA, Class 1 Carriers (2)
- **Shippers:** Communicated with interested shippers
- **Other:** Communicated with interested contractors and companies

Data gathering with stakeholders will continue throughout 3rd and 4th QTRs of FY12.

Task 3—Concept of Operations and Functional Requirements

➢ **Establish HM-ACCESS Working Group.**

- Representation from emergency response, law enforcement, shippers, and modal carriers.

- <u>Mission</u>:   The working group will serve as a venue for participants to provide information and viewpoints regarding the operational challenges and impacts associated with e-HM communication.

- The working group **WILL NOT** be used to develop a consensus or to obtain recommendations from the group acting as a collective.

- The working group will meet regularly with the PHMSA HM-ACCESS team during Tasks 3 and 4 to substantiate the team's understanding of operational procedures, technological capabilities, and ability to implement the concept of operations for e-HM communication.

14

Task 3—Concept of Operations and Functional Requirements (cont.)

➢ **Identify potential operational and/or technological e-HM solution to be tested.**

➢ **Develop concept of operations and functional requirements.**

➢ **Define use cases and testing parameters for operational test.**

➢ **Identify potential participants for operational test.**

➢ **Prepare concept of operations report and schematic diagrams.**

Task 4—Operational Test

➢ **Finalize operational testing parameters and participants.**

- Modal Use Cases - (truck to truck, rail to truck, vessel to truck, etc.)

- Shippers - (size, type, number)

- Conditions - (rural versus urban, frequency, etc.)

- Locations - (number, geographic locations, etc.)

- Law enforcement agencies - (number and type, i.e., state, local, federal, other)

- Emergency response personnel - (number and type)

- Time period and approach for full-scale test

Task 4—Operational Test (cont.)

➢ **Conduct "Table Top Exercise."**

➢ **Develop an integration and evaluation test plan (based on an operational "Pilot Test").**

➢ **Conduct pre-testing logistics.**

➢ **Conduct full-scale Operational Test.**

Task 5—Feasibility Assessment & Evaluation

➢ **Evaluate results of operational test.**

➢ **Evaluate gaps and vulnerabilities of tested e-HM communication.**

➢ **Identify recommendations:**

- To address gaps and vulnerabilities.
- For further research based on results of operational test.

➢ **Prepare feasibility assessment and evaluation report.**

Communication

➤ HM-ACCESS website:
http://hazmat.dot.gov/HM-ACCESS/index.html
(PHMSA DOT website)

➤ Initiated email account:
HMACCESS@dot.gov

➤ Stakeholder letter (03/14/12)
from Dr. Magdy El-Sibaie,
Associate Administrator

➤ Public meeting
(date TBD, likely Sept 2012)

19
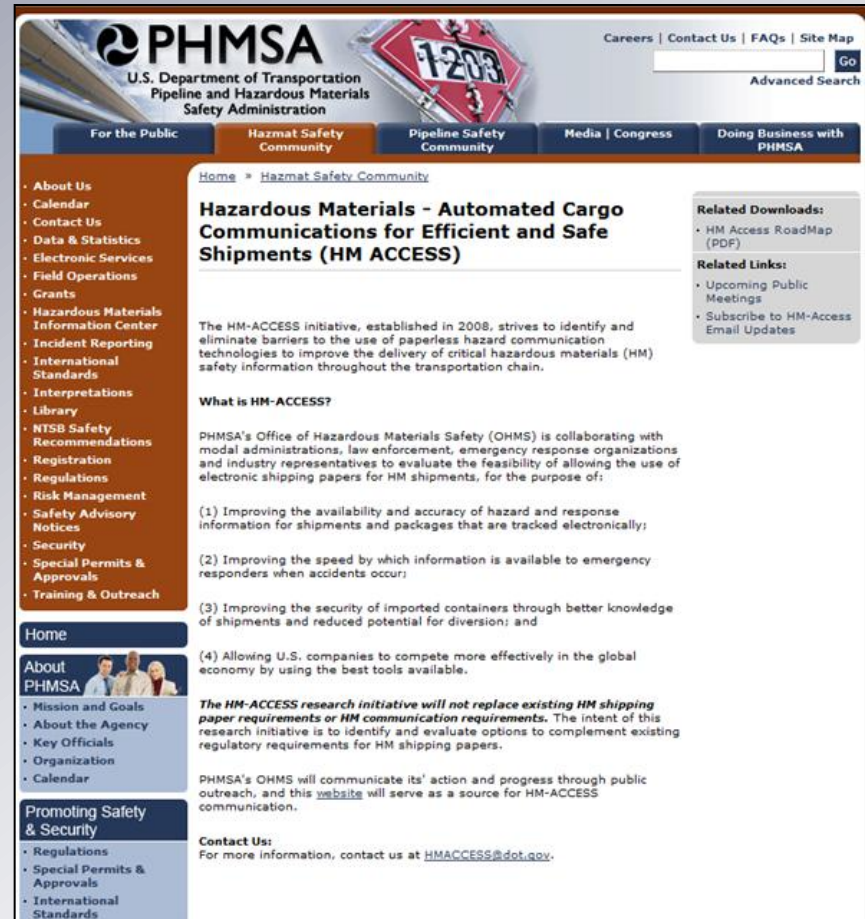
Questions

Questions regarding the HM-ACCESS initiative should be sent to:

HMACCESS@dot.gov