

DMS Composer: A Software Application for Supporting DMS Operation

Mohammad Smadi

Advanced Traffic Analysis Center

North Dakota State University

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Outline

- Background
- Purpose/Need
- Components
- Summary

Background

- DMS use increasing
- Rising user expectations
- FHWA guidelines for portable DMS
 - Proper use situations
 - Suggestions for messages
- States developing their own guidelines
 - Pressures for non-traditional use
 - “Have a nice day” messages

Conception

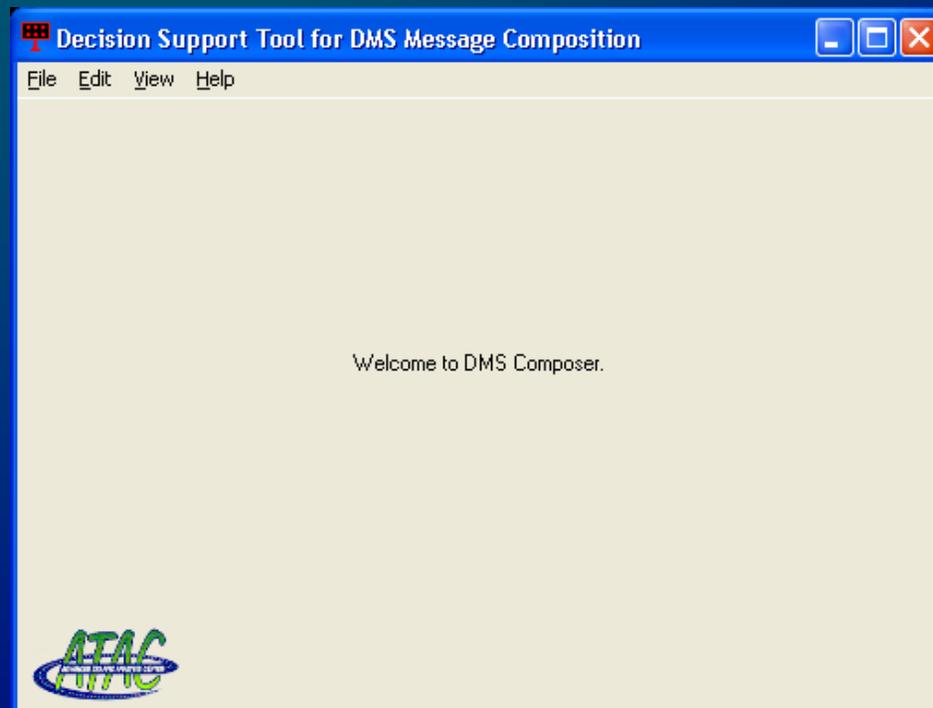
- Documenting DMS guidelines could be lengthy and cumbersome
- DMS composer is an interactive software tool to facilitate application of these guidelines

Purpose/Need

- Support the process of generating messages for display on a DMS while following state standards
 - Allows interagency integration
 - e.g. Law enforcement
 - Allows for consistent messages
 - Many users
- Training tool

DMS Composer

- A Windows based application
 - User-friendly GUI



DMS Composer

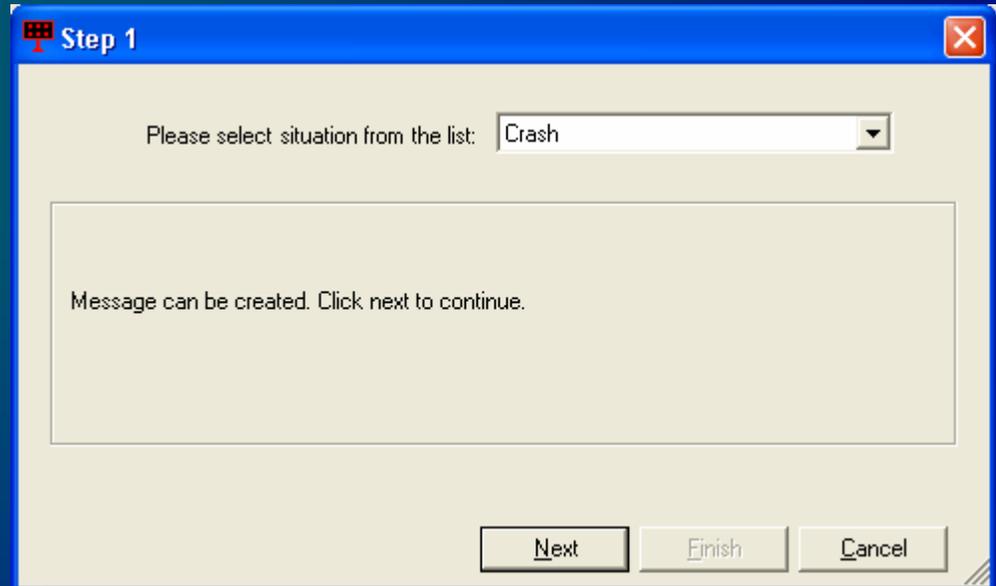
- Two main functions:
 - Ensure that a message is warranted in compliance with agency standards
 - If warranted, walk user through steps to create a message
 - Formatted to fit display specifications
 - Agency guidelines are followed, i.e. phase timings, acceptable abbreviations

Major Components

- Input interface
- Decision tree
- Database
- Output interface

Input Interface

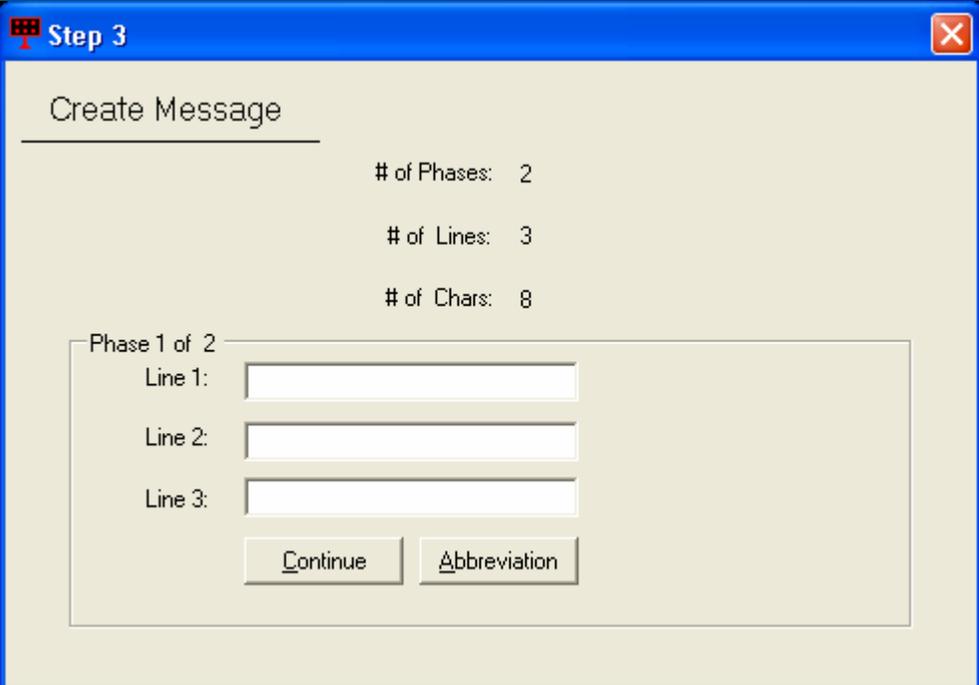
- Interview module
 - Pull-down menus & click-on buttons to answer questions
 - Outcome: warranted or not



The screenshot shows a software window titled "Step 1" with a blue title bar. Inside the window, there is a text prompt: "Please select situation from the list:". To the right of this prompt is a pull-down menu with "Crash" selected. Below the prompt and menu is a large rectangular area containing the text: "Message can be created. Click next to continue." At the bottom right of the window, there are three buttons: "Next", "Finish", and "Cancel".

Input Interface

- Message creation module
 - User enters the message



The screenshot shows a software dialog box titled "Step 3" with a close button in the top right corner. The main title is "Create Message". Below the title, there are three lines of text: "# of Phases: 2", "# of Lines: 3", and "# of Chars: 8". Below these, there is a section labeled "Phase 1 of 2" which contains three text input fields labeled "Line 1:", "Line 2:", and "Line 3:". At the bottom of this section are two buttons: "Continue" and "Abbreviation".

Decision Tree

- Based on agency guidelines
- User asked questions about the situation
- Answers are compared against the decision tree

Step 1

Please select situation from the list:

Crash Questionaries

Is the crash impeding the flow of traffic?

Yes No

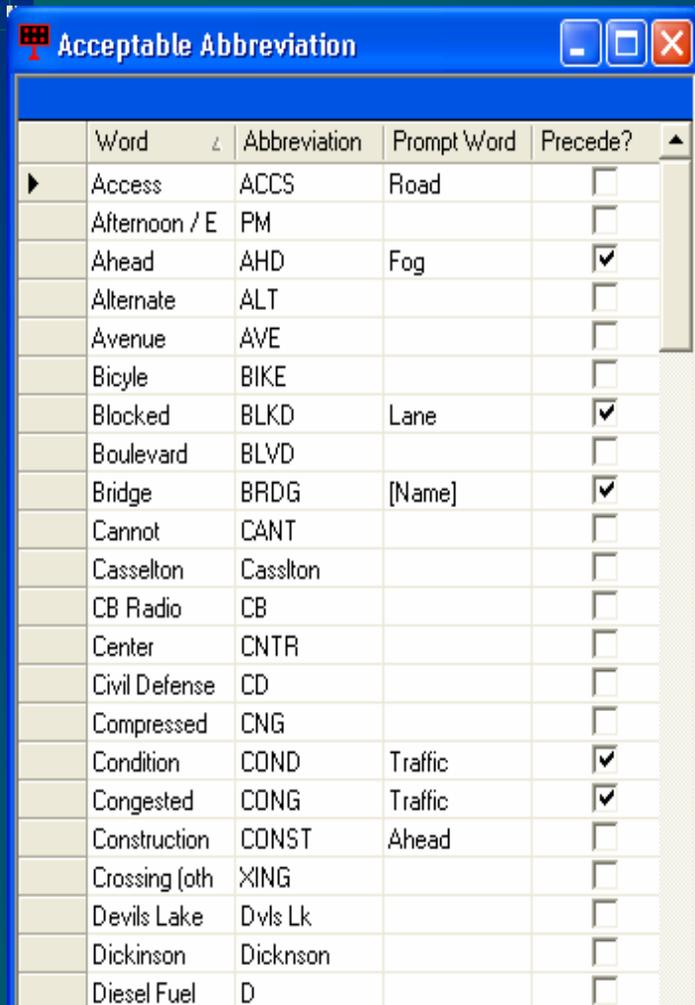
Decision Tree

- Typical situations
 - Advisories
 - Amber Alert
 - Crash
 - Disaster Management
 - Events
 - Roadwork
 - Safety Campaigns

Database

- **Message use criteria**
 - Type of situations/events
- **DMS specifications**
 - Sign type (portable or permanent)
 - Number of lines and characters allowed
- **Abbreviations**
 - **Acceptable**
 - Software will prompt the user to use an abbreviation from the list when a long word is used
 - **Non-acceptable**
 - Software will notify the user of the use of an ambiguous abb

Database



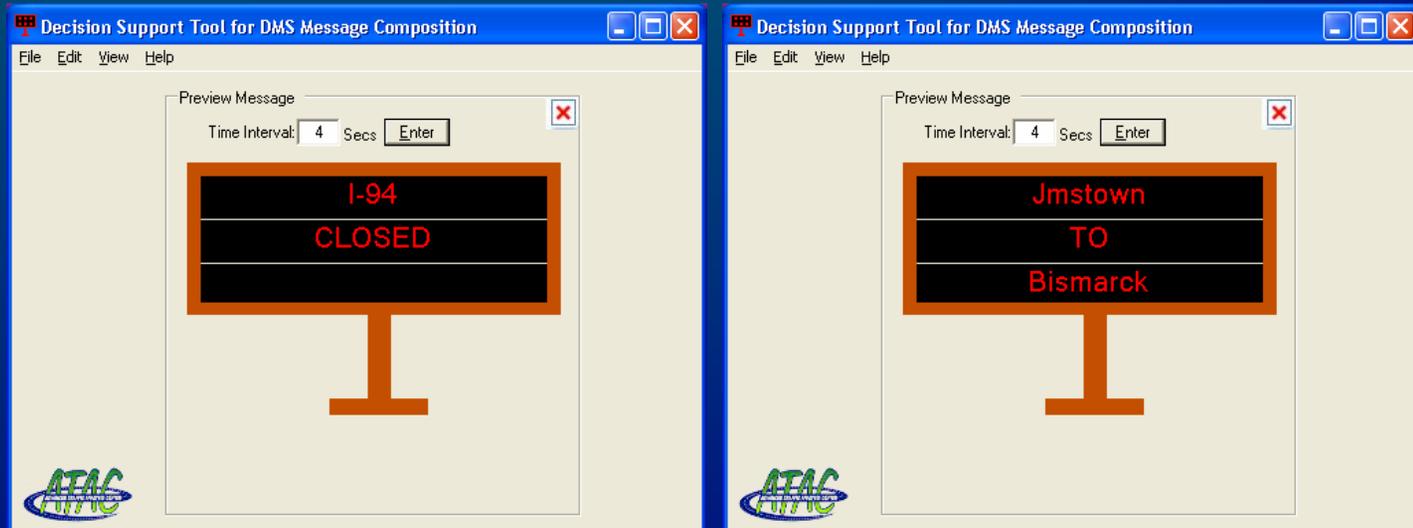
The screenshot shows a window titled "Acceptable Abbreviation" with a table containing the following data:

Word	Abbreviation	Prompt Word	Precede?
Access	ACCS	Road	<input type="checkbox"/>
Afternoon / E	PM		<input type="checkbox"/>
Ahead	AHD	Fog	<input checked="" type="checkbox"/>
Alternate	ALT		<input type="checkbox"/>
Avenue	AVE		<input type="checkbox"/>
Bicycle	BIKE		<input type="checkbox"/>
Blocked	BLKD	Lane	<input checked="" type="checkbox"/>
Boulevard	BLVD		<input type="checkbox"/>
Bridge	BRDG	[Name]	<input checked="" type="checkbox"/>
Cannot	CANT		<input type="checkbox"/>
Casselton	Casslton		<input type="checkbox"/>
CB Radio	CB		<input type="checkbox"/>
Center	CNTR		<input type="checkbox"/>
Civil Defense	CD		<input type="checkbox"/>
Compressed	CNG		<input type="checkbox"/>
Condition	COND	Traffic	<input checked="" type="checkbox"/>
Congested	CONG	Traffic	<input checked="" type="checkbox"/>
Construction	CONST	Ahead	<input type="checkbox"/>
Crossing (oth	XING		<input type="checkbox"/>
Devils Lake	Dvls Lk		<input type="checkbox"/>
Dickinson	Dicknson		<input type="checkbox"/>
Diesel Fuel	D		<input type="checkbox"/>

- Configurable according to agency guidelines

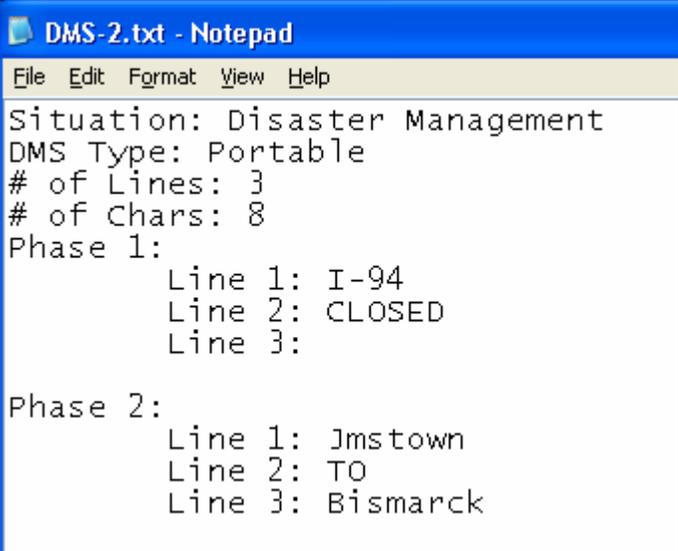
Output Interface

- Displays approved messages graphically
- Supports dual panel messages
 - Timing is incorporated into output

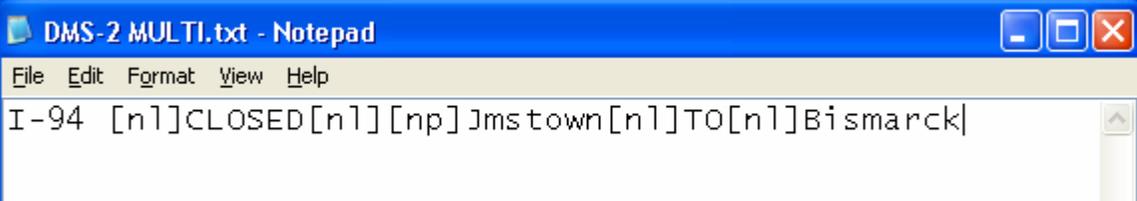


Output Interface

- Message can be saved, printed, and copied
- Saved formats:
 - Text
 - MULTI syntax format



```
DMS-2.txt - Notepad
File Edit Format View Help
Situation: Disaster Management
DMS Type: Portable
# of Lines: 3
# of Chars: 8
Phase 1:
    Line 1: I-94
    Line 2: CLOSED
    Line 3:
Phase 2:
    Line 1: Jmstown
    Line 2: TO
    Line 3: Bismarck
```



```
DMS-2 MULTI.txt - Notepad
File Edit Format View Help
I-94 [n]CLOSED[n][np]Jmstown[n]TO[n]Bismarck
```

Summary

- Simplify the process of warranting DMS message use
- Create proper messages
 - Following agency guidelines
 - Adhering to display specifications
- Adaptable
 - For different agencies
 - For possible national standards
- Training tool

Thank You

- Questions?