



# SunGuide Software User Group Meeting

Thursday, October 12, 2017

Audio: 1 (312) 757-3121 ,  
Access Code 818-906-357

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GoToMeeting:

<https://global.gotomeeting.com/join/818906357>



# DMS Configuration Improvements

Derek Vollmer, FDOT



# FP 3568 Monitor and Regulate DMS Fonts



- Issue with defaults being reset on the sign and then fonts become inconsistent.
- Asking for ability to push designated font to a DMS if it is determined to be different.
- Asking to periodically poll DMS for configured fonts.

# Font Configuration

**DMS Font Configuration Dialog**

+ Add Font - Delete Font | 
 + Add Character - Delete Character

Name	Default Width	Line Height	Character Spacing	Line Spacing
AMS Toll Sign Font	4	8	1	0
Daktronics23SeriesE	15	23	5	5
FDOTColorDMS	5	7	2	3
FullColor34	10	14	4	4
MarkIVFteFont	6	7	0	0
Standard	5	7	2	3

# Font Configuration

## NTCIP Objects

- numFonts – max fonts sign can support
- fontName – string name of font
- fontHeight – height in pixels
- fontCharSpacing – space in pixels between characters
- fontLineSpacing – space in pixels between lines

## SunGuide Font Config

- No equivalent
- Name
- Line Height – would be character height
- Character Spacing – maps to fontCharSpacing
- Line Spacing – Maps to fontLineSpacing
- Default width – does not map to an NTCIP object

# Font Configuration

## Additional NTCIP Objects

- fontVersionID – a “relatively” unique calculated ID for a font
  - Fonts can have the same name but one character can be slightly different and generate a different ID.
- maxFontCharacters – maximum number of characters you can define for a font.
- characterWidth – defined for each character within the font
- characterBitmap – on/off state of pixels in a rectangle to define the character
- fontMaxCharacterSize – max size in bytes for each character.



# Font Configuration Characters in SunGuide

Character	ASCII code	Width (pixels)
B		16
C		16
D		16
G		16
I		4
K		16
L		14
M		19
N		16
O		16

## Font Characters in SunGuide

- Characters are added to show a difference in character width from the default
- Need to know how wide the characters for the font defined on the sign
- An example, the letter “l” might only be 3 pixels wide instead of 5 pixels wide.



# Standardizing Fonts

- Discuss at ITS WG meeting if Districts are interested in Statewide standardized fonts
- Would need 18" character fonts for 66mm, 34mm, and 20mm pitch signs
- Would have a regular and narrow font (similar to what is on signs today)

# Standardizing Fonts

- Arterial signs (Speed Limit < 45MPH) can use 12" font height.
  - Pixel pitches include 20mm, 34mm, and 44mm.
  - Would have normal and narrow font. Not sure if 44mm font can mimic the MUTCD Series E2000 Font.

## Fonts

- Some DMS support 4 fonts and some support 20 fonts
- Supplemental DMS requirements say a DMS must support a minimum of 4 fonts.
- 20 fonts is too many, and we are only guaranteed 4 fonts on a sign.

# Fonts

- NTCIP fontIndex object lets us know which row the font is in the font table
- NTCIP fontNumber object is a user specified number for the font.
  - Can be different from fontIndex
  - Is used to specify the font in the MULTI Message
  - fontNumber 1 can be in row 20.

# Fonts

- We could manage the first 4 rows in the font table
  - This could be done without standardizing fonts
  - We could grab the first 4 font rows including character bitmaps and only store unique fonts in the database.
  - The version ID object would let us know what is “relatively” unique

# Fonts

- Need to expose the ability to get and set the default font on the sign.
- Default is used when no font number is specified in the message.
- Currently, SunGuide does not use a font number in messages

# Fonts

- Default Font considerations
  - Retrieve current value from DMS
  - Commit to configuration (show SunGuide config vs retrieved value, could show font name if needed)
  - Set to sign
  - Ability to set a single default font value to all signs?
    - Would require the appropriate font on all signs to have the same font number
    - Individual signs could be changed to a different value if needed
  - Considering an “Advanced” configuration window
    - Would include additional sign configuration, i.e. recovery messages

# Font Management

- Would have the ability to update the font configuration by uploading the information from a sign
  - Do we need a review font and commit font feature?
  - Commit would be to accept what you uploaded from the sign.
  - Could expose some simple changes to fonts, i.e. name, line spacing, character spacing
    - Only if we don't standardize fonts
- When we poll a DMS we could retrieve the font characteristics, i.e. name and version ID, and compare to the expected/configured font.
  - Change would be detected, but note the time delay based on the poll cycle



# Font Management

- As requested by District 5, we could detect a difference in the font and automatically download the correct font to the sign.
- We could have an alert instead and an approved user could download the fonts to the sign
- If a font difference is detected and not resolved, we could stop sending messages to that sign until the issue is resolved. Blank the sign the go into error state?
  - Need to be able to show why in error
  - Might not be the best idea

# Font Management

- Some things to consider:
  - Font “in use” cannot be deleted
  - If a font is in use, the message needs to be blanked and then the font state can be changed.
  - If we automatically restore fonts, it may be necessary to blank the sign first.
  - We can consider adding the font number and version id to the DMS message
    - Message would not activate if the font version ID is different than what we send
    - Could alert us to a change quicker.
    - Sign would indicate a MULTI error and the error would be fontVersionID
    - If we do this, then need to send font number and version ID all the time. Default font would mean SunGuide sends a specific font number and version ID.

# Discussion

- Questions and extended discussions



To Be Continued....