



Visually Integrated Display Symbology (VIDS)

WG-1 RECOMMENDED PRACTICES

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The NextGen Video Information Systems Alliance is an international industry consortium committed to accelerating the development and practical implementation of innovative approaches to advanced information services - including emergency communications - in nextgen broadcast and OTT systems.

Our vision is for the industry to provide video services providers with strong value through innovation and collaboration on advanced information services, including next-gen Emergency Alert System compliance, value-added Advanced Emergency Information services, CVAA accessibility requirements, and specialized services for first responders and the public.

Implementers with feedback, comments, or potential bug reports relating to this document may contact NVISA at NVISA.innovates@gmail.com .

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Recommended Practices for Video Information Display Symbolology

Scope

This document makes recommendations related to the visual presentation of emergency information via display systems able to combine graphics and text elements which include, but are not limited to; the Emergency Alert System (EAS), Advanced Emergency Information (AEA) applications NextGen TV, digital signage, among others.

References

Informative References

The following document contains provisions that, through reference in this text, constitute informative provisions of this document. At the time of publication, the editions indicated were valid. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. All documents are subject to revision. Users of this document are cautioned that newer editions of the referenced documents might or might not be compatible.

Informative Reference List

ISO 22324:2015 “Societal security — Emergency management — Guidelines for Color-coded Alerts”

ISO 7010 “Graphical symbols — Public information symbols”

National Alliance for Public Safety GIS (NAPSG) Foundation

<https://napsweb.s3.amazonaws.com/symbology/index.html#/subcat?Public%20Alert>

Normative Reference List

1. United States Code of Federal Regulations, Title 47, Part 11 (47 CFR 11)
2. Canadian National Public Alerting System: Common Look and Feel Guidance
<https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/mrgnc-prprdnss/npas/clf-Ing-20-en.aspx>
 - a. <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/mrgnc-prprdnss/npas/clf-Ing-20-en.aspx#sd23>
 - i. Appendix 8.15 Medium Specific Considerations

Compliance Notation

As used in this document “should” denotes a provision that is recommended but not mandatory.

“May” denotes a feature whose presence does not preclude compliance and implementation of which is optional.

“Optional” denotes items that may or may not be present for compliance.

“Must” denotes items that are expected or are mandatory to be present for compliance.

This document contains references to normative elements that define any mandatory elements.

Definitions

Table 1 Definitions applicable in this Recommended Practice

ATSC 3.0 Television Set	A product capable of receiving an ATSC 3.0 transmission, producing a visible image from such a transmission, powered from the mains, and not including the main battery.
Emergency Information	Information that is not conveyed as EAS about a current emergency, that is intended to further the protection of life, health, safety, and property, i.e., critical details regarding the emergency and how to respond to the emergency. Examples of the types of emergencies covered include tornadoes, hurricanes, floods, tidal waves, earthquakes, icing conditions, heavy snows, widespread fires, discharge of toxic gases, widespread power failures, industrial explosions, civil disorders, school closings, and changes in school bus schedules resulting from such conditions, and warnings and watches of impending weather changes. See 47 CFR 79.2(a)(2).
CAP	Common Alerting Protocol (CAP) is an XML-based data format for exchanging public warnings and emergencies between alerting technologies.

Symbols and Abbreviations

Table 2 Abbreviations as they apply to this Recommended Practice

ATSC	Advanced Television Systems Committee
UI	User Interface
VDS	Video Description Service
VIDS	Visually Integrated Display Symbology
CAP	Common Alerting Protocol
EAS	Emergency Alert System
AEA	Advanced Emergency Alerting (information)

Glossary of Common Terms

This section defines the specific terminology used. The terms defined in Table 2 are common terms reflecting immersive audio capabilities that may be provided in ATSC 3.0 emissions. In some cases, these “common terms” map to alternative terms used by individual audio systems referenced in subsequent parts of this Recommended Practice.

Table 3 Glossary of Common Terms used in this Recommended Practice

Term	Description
Event Code	The three-letter acronym used to describe the particular event. Derived from the Specific Area Message Encoding (SAME) protocol used for framing and classification of broadcast emergency warning messages. Developed by the United States National Weather Service for use on its NOAA Weather Radio network, later adopted by the Federal Communications Commission for the Emergency Alert System. Elements are also used by Environment Canada and the Mexican Seismic Alert System.

Additional Resources

The graphic symbols used in this document are available in both .png and .svg formats from the NVISA website <https://www.nvisa.org>.

VIDS Overview

VIDS is an implementation combining emergency warning graphics with alert & warning text to provide an improved way of displaying emergency information, both as alerts - immediate information and advisories – non-immediate information. Display devices such as character generators, media keyers, and similar equipment adopting the VIDS recommended practices will provide enhanced accessibility through improved message presentation.

To date, the presentation of emergency information has been text-only and typically limited to one language. In rare cases, a second language is included, but there has never been a commonly defined relationship between the type of alert, the message text, and any graphical elements. Moreover, the presence of highly recognizable symbols aid in communicating the message without requiring the text to be read or comprehended, making it more inclusive of viewers without the benefit of language skills.

VIDS creates a set of display directives for integrating alert information with a specific iconography as part of the visual presentation. Each event is associated with a specific icon or symbol whose depiction graphically represents the current event and is presented with the alert text to build public awareness of these symbols and not rely wholly on reading or specific languages.

The VIDS guideline outlines the synchronized display of an alert symbology integrated with visual presentation forming an enhanced visual display to improve the viewers' experience and thereby creating better value for the broadcasters. While the initial stages are firmly rooted in broadcast, there is nothing to prevent its adoption across all manner of display technologies – CATV, digital signage, etc. VIDS is a guide for a standard look and feel to advanced multimedia alerts that are fully compatible with emergency alert requirements across North America, but is not wholly limited in its scope or capabilities by geography or language.

The graphical display symbology contained in VIDS builds upon the public policy and social science research conducted by entities including FEMA IPAWS, the DHS Geospatial Management Office, the DHS Science & Technology Directorate, and the National Alliance for Public Safety GIS Foundation, and modeled following International Standards Organization (ISO) work. Building upon these foundational elements, VIDS provides a uniform method of display depending on event type or level of urgency

Systems using VIDS enhanced equipment will provide viewers with a much better presentation of alerting information. For broadcasters, devices using the VIDS specification will provide an integrated look and feel for advanced emergency alerts, with enhanced accessibility and appeal for viewing audiences. For manufacturers, the VIDS specification provides a standardized method for media keyers and similar downstream devices to integrate, package and display alert text and graphics.

VIDS showcases what can be accomplished with current technologies (ATSC 1.0) and what is also possible for use in newer standards such as NextGen TV (ATSC 3.0).

VIDS Presentation Model

Alerts are separated into five (5) groups numbered from 1 to 5 to define the recommended graphic characteristics. These five groups are not meant to be a form of alert prioritization, although the intent is to organize the members of each group under the pretext of warnings, watches, information, and tests.

The groups are summarized in Table 4 below.

Table 4. Summary of Alert Groupings

Group Number	Description
Group 1	Highest Urgency/Impact
Group 2	General Warnings
Group 3	General Watches
Group 4	General Information
Group 5	Tests

In addition to grouping alerts which define “what” is presented, VIDS also defines two display modes to recommend “how” the display is presented. Description of these two display modes are in Table 5 below.

Table 5. Summary of Display Modes

Display Mode	Description
Mode 1	Graphic is presented in combination with text and both are removed at the same time.
Mode 2 (optional)	Graphic remains on the screen after text is removed for the duration of the alert, or until removed by specific operator action. This is used to indicate the alert is still active, regardless of any associated message text or audio.

When an alert triggers the display of the alert text and graphic on the screen the display is ALWAYS mode 1. Use of display mode 2 is optional and is outlined in use with Group 1 alerts below.

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1. VIDS General Display Parameters

1.1. **Font:**

1.1.1. *A sans serif (such as Arial) or slab serif font should be utilized and of a size consistent with content normally presented for reading on expected visual media sizes.*

1.1.2. *Serif fonts should be avoided.*

1.1.3. *A single font should be used in the display for a uniform display.*

1.1.4. *Text color should have a high contrast relationship with the background color.*

1.2. **Background Colors:**

1.2.1. *The alert banner or screen background should be a solid color providing sufficient contrast with the font.*

1.2.2. *Colors are defined in relationship to their respective group.*

1.2.3. *Note to match the standards of the Canadian Common Look and Feel, they should utilize a solid red background, with white text.*

2. Banner (Crawl) Display Parameters

2.1. **Position:**

2.1.1. *The position of the emergency alert crawl (banner) should be configurable.*

2.1.2. *The presentation should place the top of the banner approximately 7% down from the top of the screen. This is approximately 50 pixels down on a 1280x720 resolution display and approximately 75 pixels down for a 1920x1080 resolution display.*

2.1.3. *The banner height should be approximately 10% of the total screen height. This would be approximately 72-pixels in height on a 1280x720 resolution display and approximately 108 pixels in height for a 1920x1080 resolution display.*

2.1.4. *The height of the symbol should be approximately 140% of the alert crawl banner height. This is approximately a 100-pixel symbol height for a 1280x720 resolution display and approximately a 150-pixel symbol height for a 1920x1080 resolution display.*

2.1.5. *The symbol should be vertically centered over the crawl banner positioned on the left edge of the crawl banner approximately 5% of the screen width from the left edge of the screen. This is approximately 64 pixels from the left edge for a 1280x720 resolution display and approximately 96 pixels from the left edge for a 1920x1080 resolution display.*

2.1.6. *The height of the crawl font should be approximately 70% of the crawl banner height. This is approximately a 50-pixel font size with a 72-pixel crawl banner height for a 1280x720 resolution display and a 75-pixel font size with a 108-pixel crawl banner height for a 1920x1080 resolution display.*

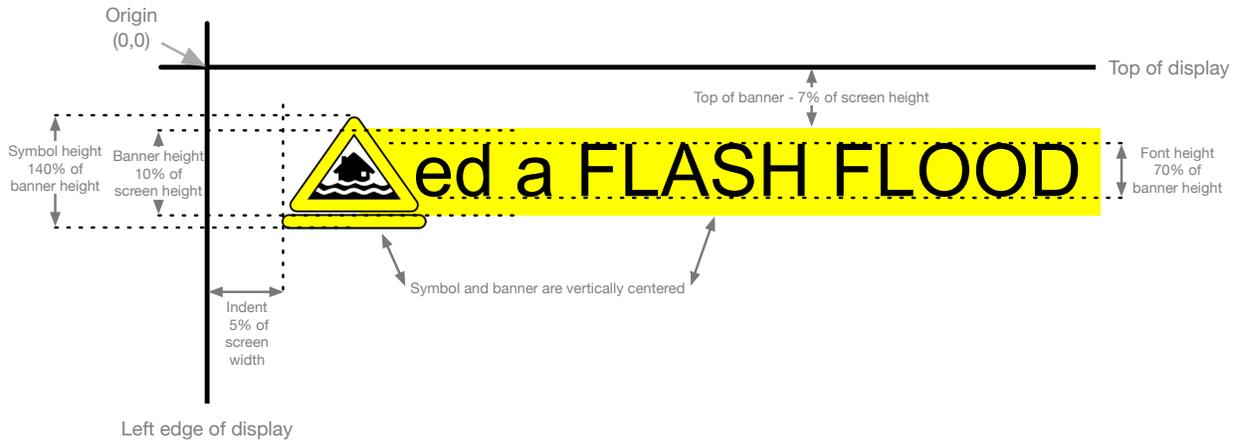


Figure 1. Recommended placement and relationship of symbol, banner and font to screen height.

2.1.7. For Canadian users: special consideration should be to keep the banner centered mid-screen to avoid conflict lower third crawl displays, with a recommended placement in the top at 55% of picture height down from the top, and the bottom of the banner 70% down from the top.

2.1.8. Direction: The direction of the text scroll should be from right to left.

2.1.9. Crawl Rate: The rate of the scrolling text should not exceed 400 characters per minute.

Alert Groups

3. Group 1 Alerts (Highest Urgency/Impact)

Alerts considered the most important/impactful are presented in two sequential display modes. The first mode combines the text and the icon, which are presented at the same time. The second mode is a persistent display of the icon which remains on screen for the effective duration of the alert.

Table 6: Examples of Group 1 Event Codes

Code	Description	Symbol
EAN	Emergency Action Notification	
TOR	Tornado Warning	
TSW	Tsunami Warning	

3.1. Display Mode 1

3.1.1. The banner background color should be a solid red (in the range of Hex FF0000) matching the icon frame color.

3.1.2. The banner text must be white, with black edging preferred, to enhance legibility.

3.1.3. The text must be presented so the alert message is displayed in its entirety at least once.

- 3.1.4. The alert text display should repeat while the accompanying audio message is being played.
- 3.1.5. The alert symbol should be displayed on the left side of the screen at the same presentation level as the banner.
- 3.1.6. The alert symbol should appear at the same time as the text banner. See Figure 2 Representation of Display during Group 1 - Mode 1 below.



Figure 2 Representation of Display during Group 1 - Mode 1

- 3.1.7. At the conclusion of the message audio the text should finish its current crawl sequence, then removed from display.

3.2. Display Mode 2

- 3.2.1. Text should not be present, as it is typically removed after accompanying audio (see 4.1.7)
- 3.2.2. The icon should persist for the duration of the event's effective time.
- 3.2.2.1. For an EAS event, the duration is included in the event message as the time the event will expire with many systems providing the duration as a numerical value in seconds. Conversely, the value can be derived by subtracting the message start time and end time.
- 3.2.3. Icon display should cease after the EAS duration has expired.
- 3.2.3.1. **OPTION 1:** The system should provide the operator with the option of terminating the symbol display before the effective time has expired.
- 3.2.3.2. **OPTION 2:** The system should provide the operator with a configurable display time for the symbol after the banner has stopped (e.g. 1, min, 5 min, 15 min ...)
- See Figure 3. Representation of Group 1- Mode 2 below for an example of this display mode.



Figure 3. Representation of Group 1- Mode 2 alert presentation

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4. Group 2 Alerts – General Warnings

These alerts are considered very important, but are only presented in a single-mode, that is displaying the text and symbol at the same time, then removing both after the message display has completed.

Table 7: Group 2 Event Codes

Code	Description	Symbol
AVW	Avalanche Warning	
BLU	Blue Alert	
BZW	Blizzard Warning	
CAE	Child Abduction Emergency	
CDW	Civil Danger Warning	
CEM	Civil Emergency Message	
CFW	Coastal Flood Warning	
DSW	Dust Storm Warning	
EQW	Earthquake Warning	
EVI	Evacuation Immediate	
EWW	Extreme Wind Warning	
FFW	Flash Flood Warning	
FLW	Flood Warning	
FRW	Fire Warning	

HMW	Hazardous Materials Warning	
HUW	Hurricane Warning	
HWW	High Wind Warning	
LAE	Local Area Emergency	
LEW	Law Enforcement Warning	
NUW	Nuclear Power Plant Warning	
RHW	Radiological Hazard Warning	
SMW	Special Marine Warning	
SPW	Shelter in Place Warning	
SSW	Storm Surge Warning	
SVR	Severe Thunderstorm Warning	
TOE	911 Telephone Outage Emergency	
TRW	Tropical Storm Warning	
VOW	Volcano Warning	
WSW	Winter Storm Warning	

- 4.1. *Background color:* The background of the crawl should be a solid red (in the range of Hex FF0000) matching the icon frame color.
- 4.2. *Text Color:* The text color should be white with black edging preferred, where it enhances legibility.
- 4.3. *Display duration:* The alert text should be presented until the alert message is displayed

completely at least once. The alert text display must not stop while the accompanying audio message is being issued.

- 4.4. *Icon display: The alert symbol should be displayed on the left side of the screen at the same presentation level as the banner. The alert symbol should disappear with the alert text*



Figure 4. Representation of Group 2 alert presentation

- 4.4.1. *At the conclusion of the message audio the text should finish its current crawl sequence, then removed from display.*

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5. Group 3 Alerts – General Watches

Group 3 alerts are generally informative, rather than conveying the need for urgent action. These alerts are presented in a single-mode only – combined text and the icon presentation.

Table 8: Group 3 Event Codes

Code	Description	Symbol
AVA	Avalanche Watch	
CFA	Coastal Flood Watch	
FFA	Flash Flood Watch	
FLA	Flood Watch	
HUA	Hurricane Watch	
HWA	High Wind Watch	
SSA	Storm Surge Watch (Advisory)	
SVA	Severe Thunderstorm Watch	
TOA	Tornado Watch	
TRA	Tropical Storm Watch	
TSA	Tsunami Watch	
WSA	Winter Storm Watch	

- 5.1. *Banner background color:* The banner background should be solid yellow (in the range of Hex FFFF00) matching icon surround color.
- 5.2. *Banner Text Color:* The text color should be black.
- 5.3. *Icon display:* The alert symbol should be displayed on the left side of the screen at the same presentation level as the banner. The icon should disappear with the alert text.

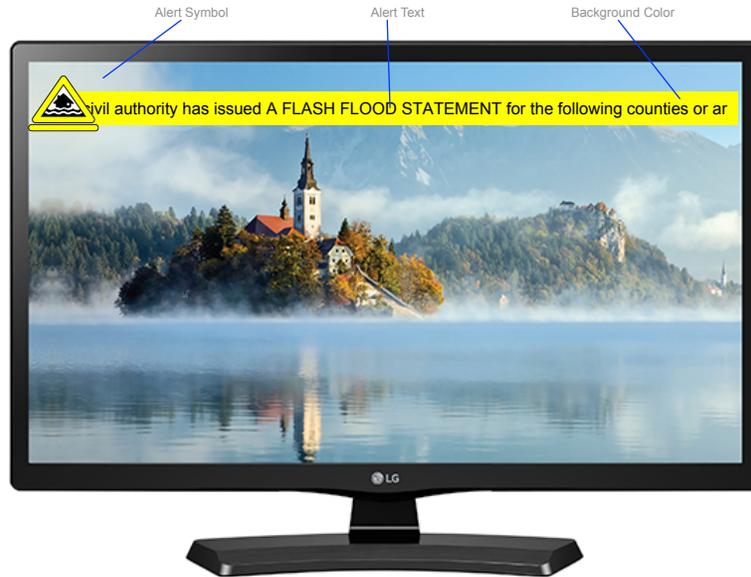


Figure 5. Representation of Group 3 alert presentation.

5.3.1. At the conclusion of the message audio the text should finish its current crawl sequence, then removed from display.

(continued on following page)

6. Group 4 Alerts – General Information

These alerts are informational and should be presented single-mode only – with a combined text and the icon presentation.

Table 9: Group 4 Event Codes

Code	Description	Symbol
ADR	Administrative Message	
DMO	Practice/Demo Warning	
FFS	Flash Flood Statement	
FLS	Flood Statement	
HLS	Hurricane Statement	
NIC	National Information Center	
NMN	Network Message Notification	
SPS	Special Weather Statement	
SVS	Severe Weather Statement	

- 6.1. *Banner Background color: The banner should be a solid blue color (in the range of Hex 0000FF) matching icon surround color.*
- 6.2. *Banner Text Color: The text should be white (provided there is high contrast with the banner background).*
 - 6.2.1. *Black is also acceptable, again provided there is high contrast with the banner background.*
- 6.3. *Icon display: The alert symbol should be displayed on the left side of the screen - the same presentation level as the banner. The alert symbol should disappear with the alert text*

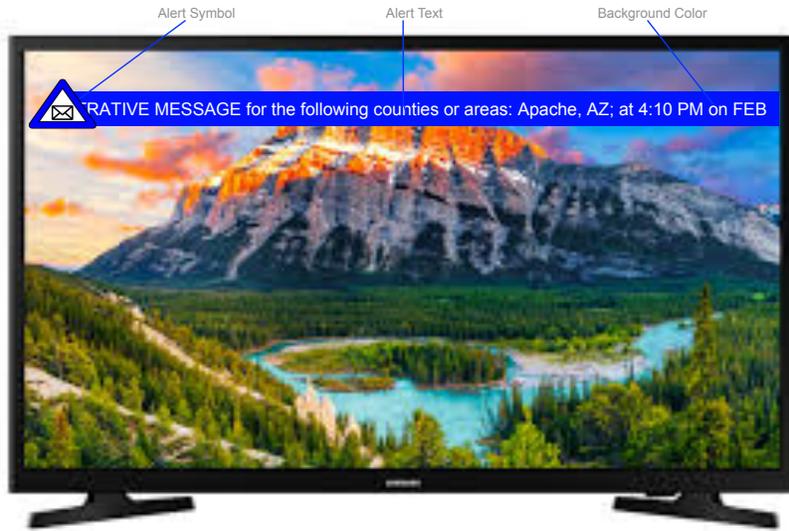


Figure 6. Representation of Group 4 alert presentation

6.3.1. *At the conclusion of the message audio the text should finish its current crawl sequence, then removed from display.*

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7. Group 5 Alerts – Tests

These alerts are informational and should be presented single-mode only – with a combined text and the icon presentation.

Table 10: Group 4 Event Codes

Code	Description	Symbol
NPT	National Periodic Test	
RMT	Required Monthly Test	
RWT	Required Weekly Test	

- 7.1. *Banner Background color: The banner should be a solid green color (in the range of Hex 009900) matching icon surround color.*
- 7.2. *Banner Text Color: The text should be white (provided there is high contrast with the banner background).*
 - 7.2.1. *Black is also acceptable, again provided there is high contrast with the banner background.*
- 7.3. *Icon display: The alert symbol should be displayed on the left side of the screen - the same presentation level as the banner. The alert symbol should disappear with the alert text*

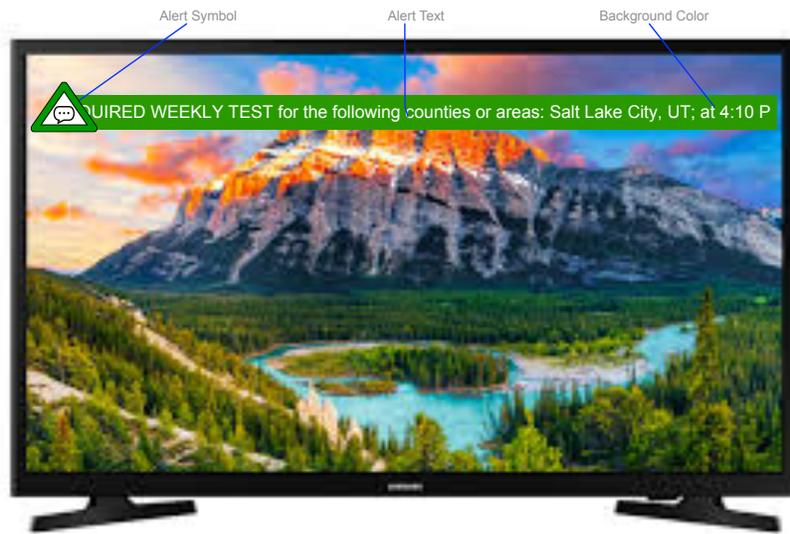


Figure 7. Representation of Group 5 alert presentation

- 7.3.1. *At the conclusion of the message audio the text should finish its current crawl sequence, then removed from display.*

8. Considerations for Using Symbology on Full-Screen Displays

Additional information on using the icons when showing an alert with full-screen text. (refer to section Full-Screen Display Parameters) above.

8.1. Icon Placement - RESERVED

8.2. Text Placement - RESERVED

8.3. Background Colors - RESERVED

8.4. The text should be limited to 120 words or approximately 720 characters, per page.

8.5. The text should be centered at a screen midpoint, both horizontally and vertically. The entire text should be visible using a 4:3 aspect ratio.

8.6. Single-page full-screen displays should be presented for the duration of the accompanying audio

8.7. Special consideration for Canadian users is that the page should be presented or available for no less than 15 seconds and no more than 60 seconds.

8.8. When the text appears on multiple pages, an indication of the number of pages used to present text should be presented below the banner at all times. e.g. "Page x of y" pages or in the form "x/y".

8.9. Each page of a multiple page display should be presented for no less than 15 seconds.

8.10. All pages in a multi-page display should be presented at least once, even if the audio portion of the message ends before the display is complete.

9. Considerations for Use of Symbology in ATSC 3.0 AEA Displays

RESERVED

APPENDIX

A. Examples of VIDS in actual displays

The following are screen captures showing the VIDS implementation in actual use¹. Each of the five groups are represented to showcase the relationship of size and color.

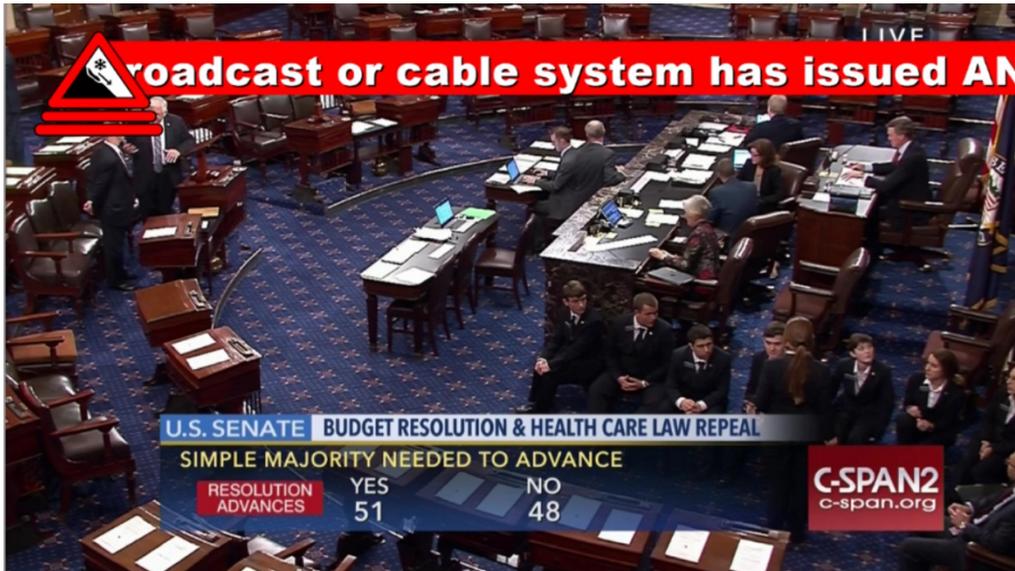


Figure 8. Actual screen capture displaying a VIDS Group 1 & 2 enhanced alert

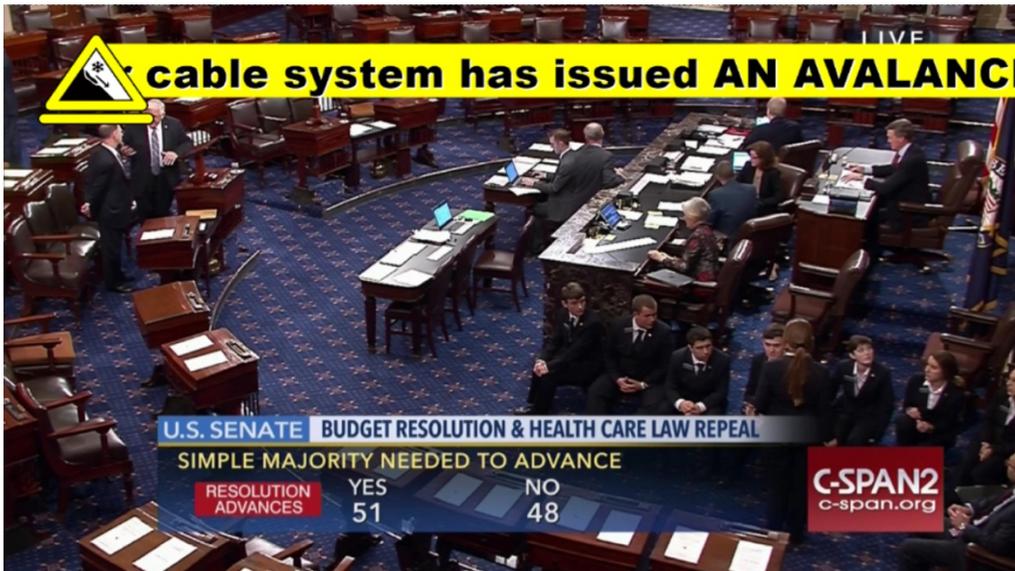


Figure 9. Actual screen capture displaying a VIDS Group 3 enhanced alert

¹ All screen captures courtesy of Digit Signage Technologies using their ChyTV EAS HD platform.

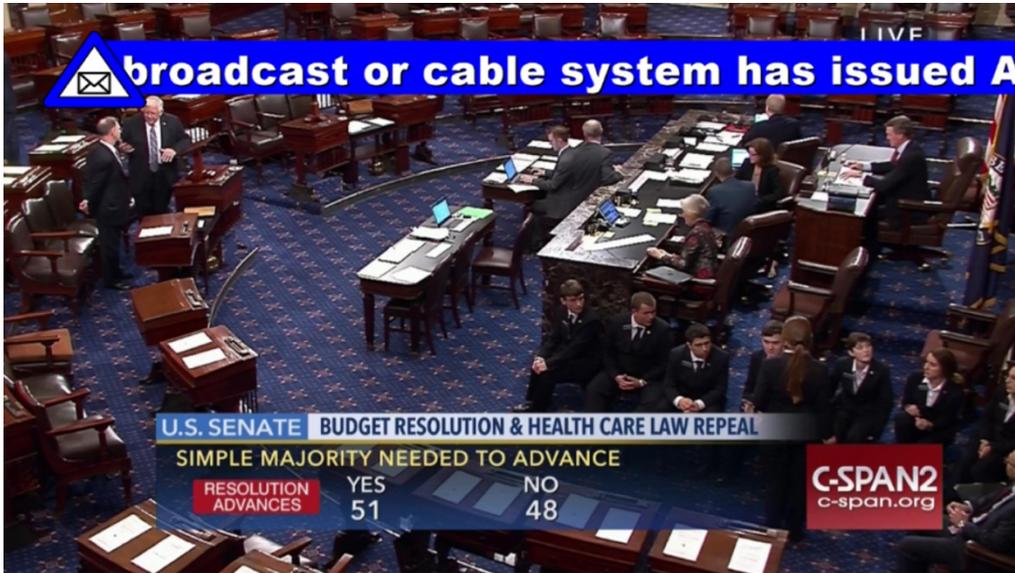


Figure 10. Actual screen capture displaying a VIDS Group 4 enhanced alert

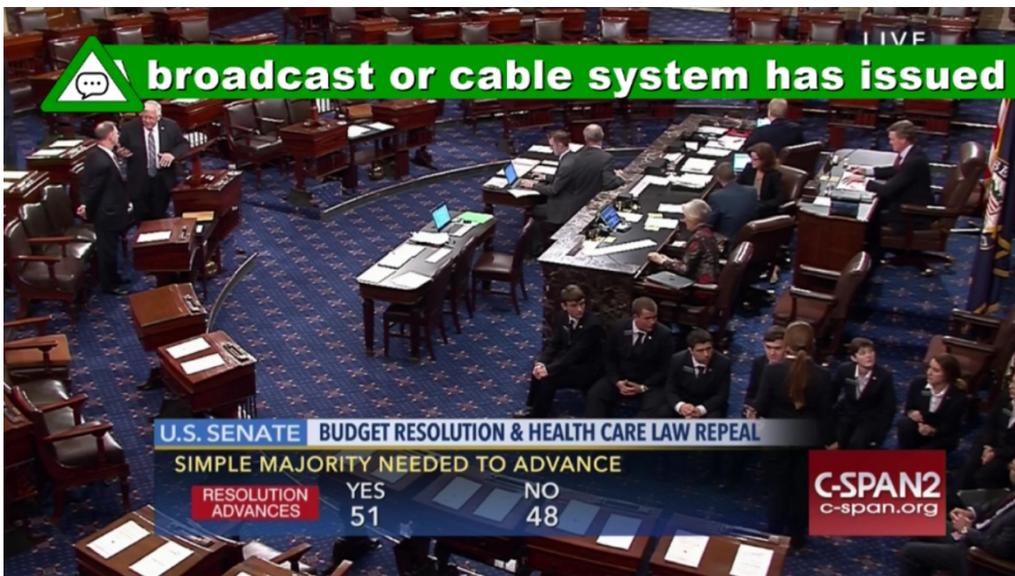


Figure 11. Actual screen capture displaying a VIDS Group 5 enhanced alert

(END)

Revision History

Date	Revision	Notes
11-19-2020	1.0	Initial document release.
11-20-20	1.1	Corrected banner font height relationship. Section 5.1 changing “orange” to “yellow” and the current color value. Section 6.1 corrected blue value
1-12-21	1.2	Added attribution of The National Alliance for Public Safety GIS (NAPSG) Foundation