

TECHNICAL REQUIREMENT OF EWS Based on Permen Kominfo No 03 Tahun 2014

1. General

- a. Digital broadcast television receiver and equipment system must have a menu to enter and store the location code where the digital television broadcast receiver (set top box) assistive system and digital broadcast television receiver are located.
- b. Digital broadcast television receiver equipment and devices must be able to process content that has a PID for the EWS determined by the Ministry of Communication and Information. Content processing as referred to is listed in point 2.
- c. Digital broadcast television receiver equipment and devices must be able to display EWS messages on a television screen in accordance with information on the results of content processing in letter b above. Display EWS messages as referred to are listed in point 2.
- d. Digital broadcast television receiver equipment and devices must be equipped with EWS buzzer systems and speakers.

2. EWS Feature

Content Processing that has PID for EWS

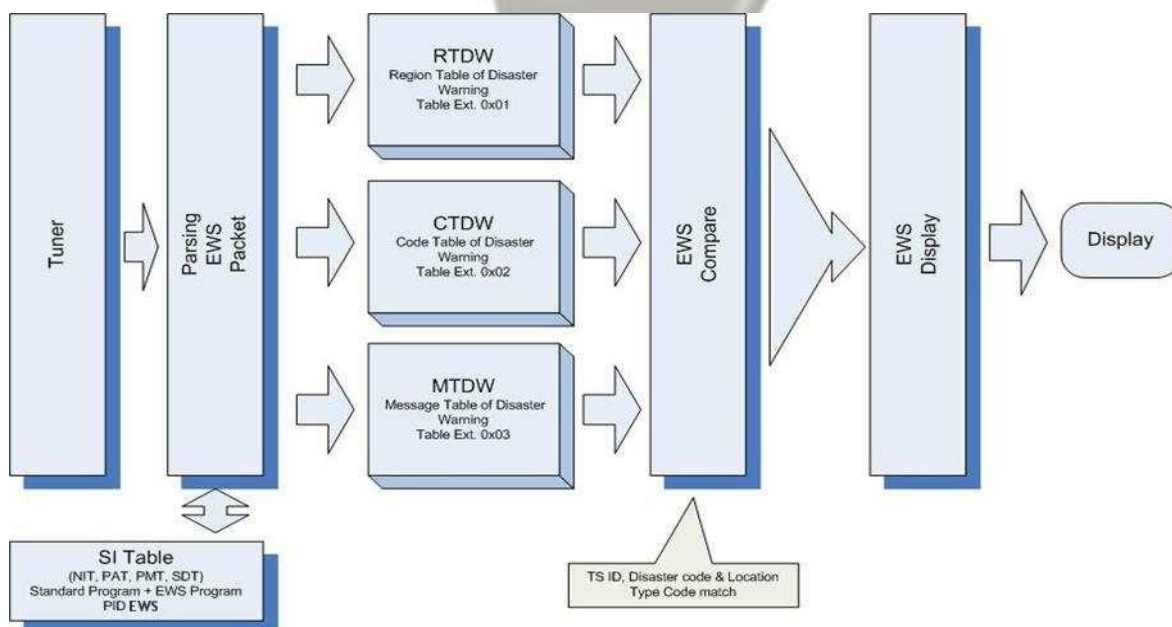


Figure 1. EWS Content Processing AT digital TV receiver digital (DVB-T2)

Digital broadcast television receiver equipment that performs the EWS information do filtering process by filtering Service Information Sub System in the form of EWS tables in Private Section Tables. EWS tables must be able to accommodate information that will be shared to viewers.

Information (in text format) that must be submitted is as follows:

- a. disaster information sender authority
- b. type of disaster
- c. time of the disaster
- d. position of the disaster
- e. characteristics of disaster
- f. message or statement from the disaster
- g. status of a disaster
- h. locations potentially affected by disaster

The required tables are as follows:

Table ID and allocation of Ekstention table ID

No.	Table	Table ID Extention
1	TRDW (TABLE REGION OF DISASTER WARNING)	0x01
2	TCDW (TABLE CODE OF DISASTER WARNING)	0x02
3	TMDW (TABLE MESSAGE OF DISASTER WARNING)	0x03

Table Region of Disaster Warning (TRDW) for adding disaster warning region. This table has id extension = 0x01.

Syntax (After Standard Header)	Of Bits	Mnemonic
} CRC_32 }	32	rpchof
TRDW_section () { table_id section_syntax_indicator private_indicator reserved private_section_length table_id_extension reserved version_number current_next_indicator section_number last_section_number disaster_code location_type_code package_id	8 1 1 2 12 16 2 5 1 8 8 16 8 8	uimsbf bslbf bslbf bslbf uimsbf uimsbf bslbf uimsbf bslbf uimsbf uimsbf uimsbf uimsbf uimsbf

number_of_location_code	8	uimsbf
for (i=0;i<N;i++){		
location_code	24	*
length_location_code	8	uimsbf
for (j=0;j<C;j++){		
char_location_code	8	uimsbf
}		

Note :

- section_number : number of each section.
- last_section_number : total number of data sections created.
- disaster_code : shows code of type disaster.
- location_type_code : is a field to indicate that data which has the same location_type_code will have multiple location_codes with one specific disaster_code.

Code table Type of disaster level (location_type_code)

No.	Jenis level Bencana	location_type_code
1	Awas	0x01
2	Siaga	0x02
3	Waspada	0x03

- package_id : shows the total package_id total that will be made.
- number_of_location_code : shows the number of location_codes to be made in each section.
- location_code : is the code for a location.
- length_location_code : is the length of the character for the description of location_code.
- char_location_code : is a description of location_code.

Syntax Table Code of Disaster Warning (TCDW) table which functions to add a disaster warning code. This table has the id number extension = 0x02.



Syntax (After Standard Header)	Of Bits	Mnemonic
<i>TCDW_section()</i> {		
<i>table_id</i>	8	uimsbf
<i>section_syntax_indicator</i>	1	bslbf
<i>private_indicator</i>	1	bslbf
<i>reserved</i>	2	bslbf
<i>private_section_length</i>	12	uimsbf
<i>table_id_extension</i>	16	uimsbf
<i>reserved</i>	2	
<i>version_number</i>	5	bslbf
<i>current_next_indicator</i>	1	uimsbf
<i>section_number</i>	8	bslbf
<i>last_section_number</i>	8	uimsbf
<i>number_of_disaster_code</i>	8	uimsbf

for (i=0;i<N;i++){		Uimsb f
package_id	8	
authority	8	uimsbf
disaster_code	16	uimsbf
length_disaster_code	8	uimsbf
for (j=0;j<O;j++){		uimsbf
char_disaster_code	8	
}		uimsbf
length_disaster_position	8	
for (k=0;k<P;k++){		uimsbf
char_disaster_position	8	
}		uimsbf
length_disaster_date	8	
for (l=0;l<Q;l++){		uimsbf
char_disaster_date	8	
}		uimsbf
length_disaster_characteristic	8	
for (m=0;m<R;m++){		uimsbf
char_disaster_characteristic	32	
}		uimsbf
}		rpchof
CRC_32		
}		

Note:











- section_number : number of each section.
- last_selection_number : total number of data sections created (3).
- number_of_disaster_code : is the number of disaster_code that will be was made.
- package_id : shows the total package_id that will be created.
- Authority : is a code for the disaster authority






Disaster authority code table

No.	Authority	Symbol/logo	Authority Code
1	Badan Meteorologi, Klimatologi dan Geofisika (BMKG)		0x01
2	Badan Nasional Penanggulangan Bencana (BNPB)		0x02

disaster_code: code of each disaster.

Symbols table for each natural disaster

No	Warning	Symbol	warning code (Heksa)
1	Earthquake		0x01
2	Tsunami		0x02
3	Volcano		0x03
4	Land Slide		0x04
5	Flood		0x05
6	Dried		0x06
7	Forest on Fire		0x07
8	Erosion		0x08
9	Building on fire		0x09
10	Extreme Wave Abrasion		0x0A

11	Extreme Wheather		0x0B
12	Technology Failure		0x0C
13	Epidemic Desease		0x0D
14	Social Conflict		0x0E
15	To be proposed		0xFF

Note :

For each symbol as shown in the table above the minimum frame size is 108 x 108 pixels

- length_disaster_code : is the length of the description from char_disaster_code.
- char_disaster_code : is a description of the disaster code.
- length_disaster_position : is the length of the description from char_disaster_position.
- char_disaster_position : is a description of the position of a disaster.
- length_disaster_date : is the length of the description from char_disaster_date.
- char_disaster_date : is a date description of the disaster
- length_disaster_ : is the length description of char_disaster_
- characteristic : is the length description of char_disaster_characteristic.
- char_disaster_characteristic : is a description of the characteristics of a disaster

Syntax Table Table Message of Disaster Warning (TMDW), which functions to add disaster warning messages. This table has the id number extension = 0x03

Syntax (After Standard Header)	Of Bits	Mnemonic
TMDW_section() {		
table_id	8	uimbsf
section_syntax_indicator	1	bslbf
private_indicator	1	bslbf
reserved	2	bslbf
private_section_length	12	uimbsf
table_id_extension	16	uimbsf
reserved	2	bslbf
version_number	5	uimbsf
current_next_indicator	1	bslbf
section_number	8	uimbsf
last_section_number	8	uimbsf
location_type_code	8	uimbsf
package_id	8	uimbsf
for (i=0;i<N;i++){		
length_information_message	16	uimbsf
for (j=0;j<C;j++){		
char_information_message	8	uimbsf
}		
}		
CRC_32	32	rpchof
}		

Note :

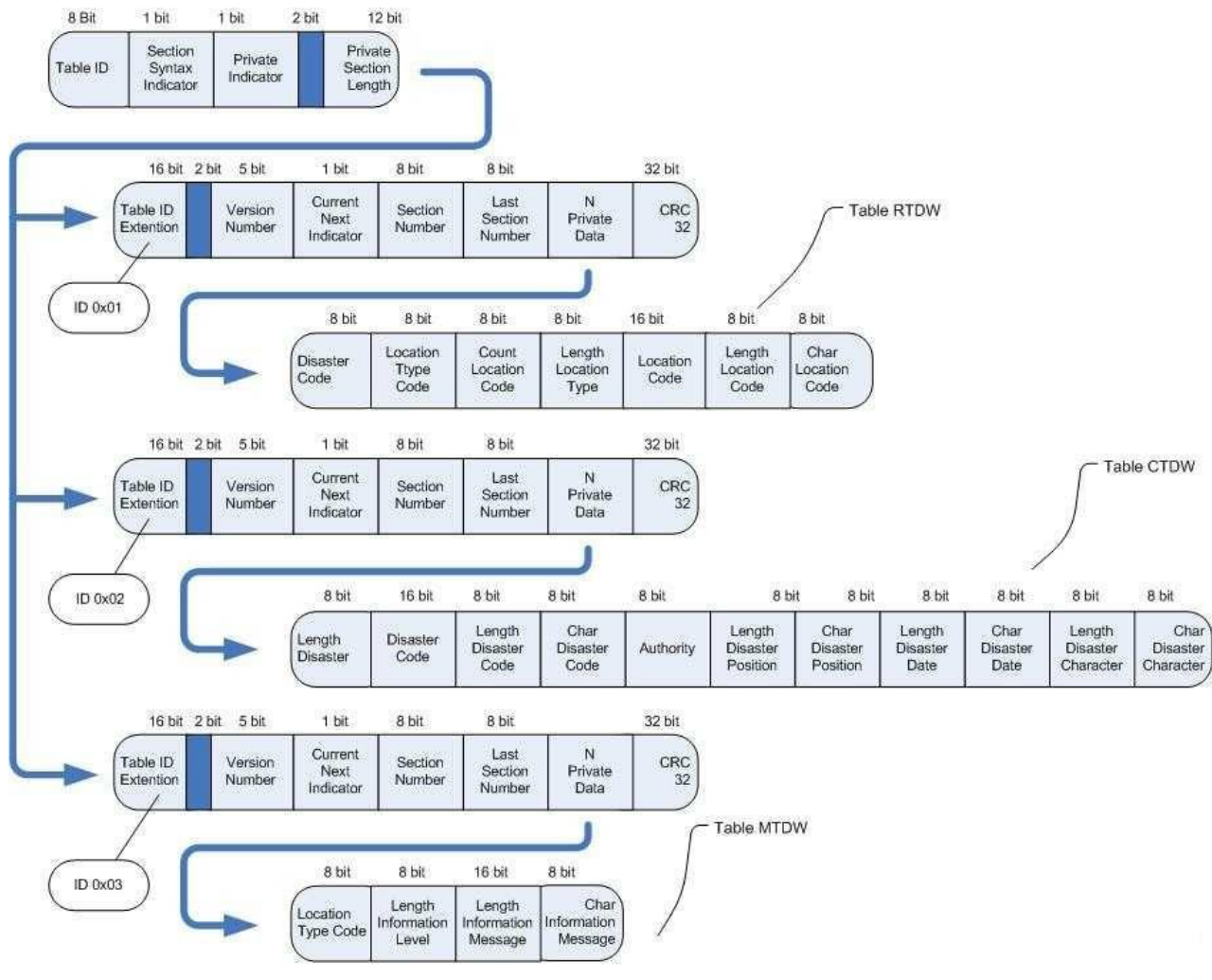
- section_number : number of each section.
- last_section_number : total number of data sections.
- location_type_code : field to indicate that data having the same location_type_code will have multiple location_codes with one specific disaster_code.
- package_id : shows the total package_id that will be created.
- length_information_message : is the length of the message information description
- char_information_message : is a description of the message information.

3. The process of making and detecting location codes

- a. The location code of the digital standard-based digital television receiver and equipment is explained as an indicator of the existence of a set top box and a digital standard-based digital television receiver when used by the user.
- b. the number of location code digits is 5 (five) digit numbers, namely:



- c. disaster location code contained in TS EWS is placed in the TRDW Table syntax variable.
- d. the process of detecting disaster locations from EWS based Transport Streams below



- e. The number of digits for detecting the disaster area location code is based on the location_code syntax in the TRD table
- f. The menu for charging location codes is run and displayed when the user first uses the digital television broadcast receiver (set top box) and digital standard television receiver based digital receiver and / or user when making settings to search for broadcast program channels.

4. Message Display on EWS

The display of the EWS message on the TV screen is based on the received Disaster status code information as in table 1 below

Disaster Status Correlation Table with location_type_code

Status Bencana	location_type_code
Awas (Caution)	0x01
Siaga (stand by)	0x02
Waspada (alert)	0x03

a. Display EWS Messages with CAUTION (AWAS) Status

A display with this alert status is raised, if the location variable of the digital broadcast television (DVB-T2) tool system and receiver device is equal to one of the values of the location_code syntax in the TRDW table, where the value of location_type_code = 0x01.

Below is an illustration of the EWS message display template with the CAUTION (AWAS) Status;

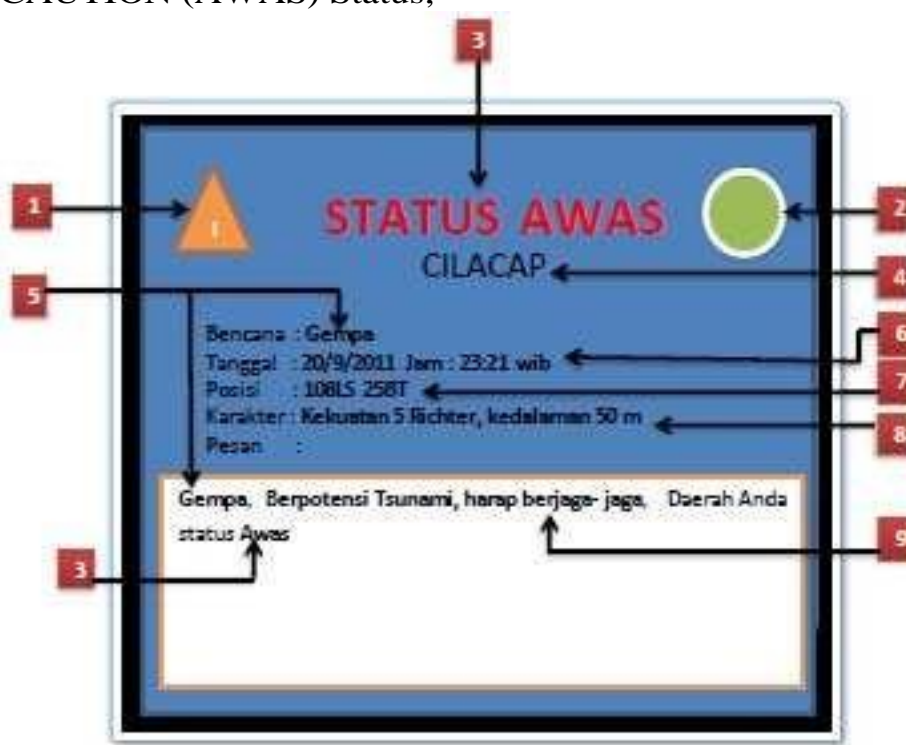


Image Template of EWS message display on a TV screen with a CAUTION (AWAS) Status

Information :

1. Disaster logo / symbol - symbol of the disaster code (disaster_code) in accordance with the Symbol Table for each disaster that exists.
2. Disaster authority logo / symbol - symbol of authority in accordance with the Code table for disaster authority.
3. Disaster area status - The status of the disaster area that corresponds to location_type_code according to the Code Table for the type of disaster level (location_type_code). The status of the disaster area is written in red font.
4. Location of the disaster area - char_location_code.
5. Disaster type - char_disaster_code.
6. Date and time of the disaster event - char_disaster_date.
7. Position of the disaster event - char_disaster_position.

8. Characteristics of a charismatic-char_disaster_characteristic event.
9. Information / advice for the disaster area-char_information_message.

Besides displaying EWS messages on a TV screen as illustrated in Figure Template, displaying EWS messages on a TV screen with a CAUTION (AWAS) Status, the digital television receiver (set top box) and digital broadcast television receiver (DVB-T2) aids are required to trigger the system function to turn on the siren buzzer.

b. Display EWS Messages with Standby Status

The display with this Standby status is raised, if the variable location of the digital broadcast television (DVB-T2) tool system and device is equal to one of the values of the TRDW-labeled location_code syntax, where the value of location_type_code = 0x02.

Below is an illustration of the EWS message display template with ALERT (SIAGA) Status.

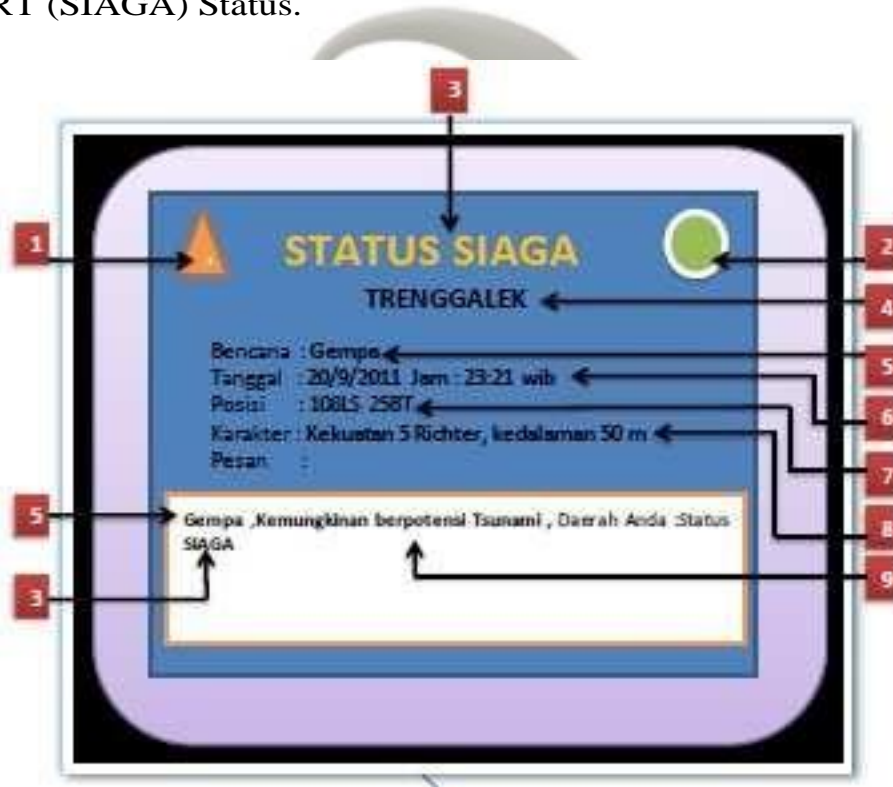


Image Template display of EWS messages on a TV screen with ALERT status.

Information:

- 1) disaster logo / symbol - the symbol of the disaster code (disaster_code) matches the symbol table for each of the existing disasters.
- 2) disaster authority logo / symbol - the symbol of the authority according to.
- 3) disaster authority table.
- 4) status of disaster area - Status of disaster area that corresponds to location_type_code according to the code table type of disaster level (location_type_code). The status of the disaster area is written in orange

fonts.

- 5) location of the disaster area - char_location_code.
- 6) type of disaster - char_disaster_code.
- 7) date and time of the disaster event - char_disaster_date.
- 8) position of the disaster event - char_disaster_position.
- 9) characteristic of disaster-char_disaster_characteristic.
- 10) information / advice for disaster areas-char_information_message.

Besides displaying EWS messages on a TV screen as illustrated in Figure Template, displaying EWS messages on a TV screen with STAND BY (SIAGA) status, digital television broadcast receiver (set top box) and digital broadcast television receiver (DVB-T2) aids are required to trigger the system function to turn on the siren buzzer.

c. Display EWS Messages with ALERT (waspada) Status

EWS message display with this Alert status is raised, if the variable location of the digital broadcast television (DVB-T2) device and receiver system location is the same as one of the location_code syntax values in the TRDW table, where the value of location_type_code = 0x03.

Below is an illustration of the EWS message display template with Alert (WASPADA) Status;

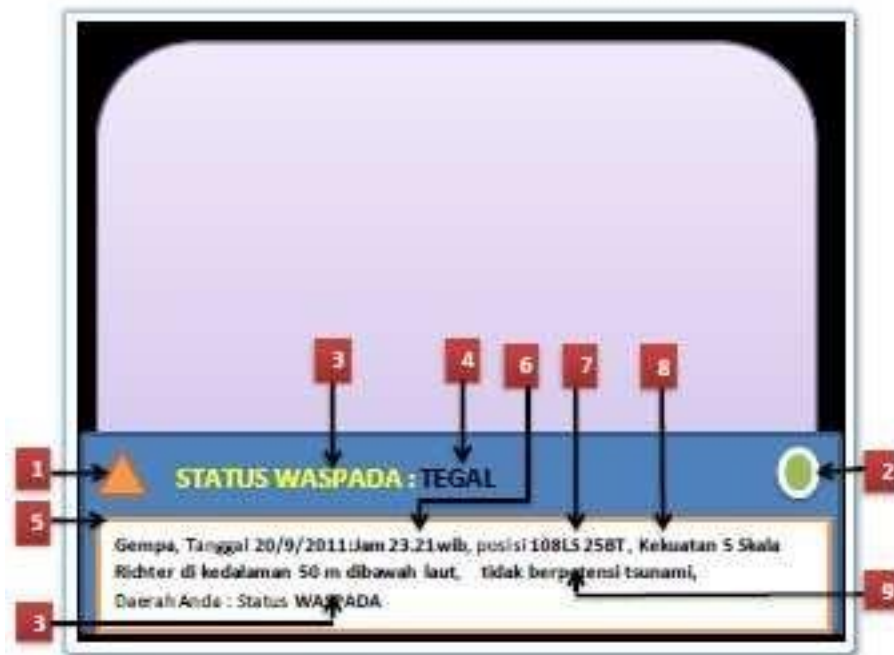


Image Template display of EWS messages on a TV screen with an ALERT status.

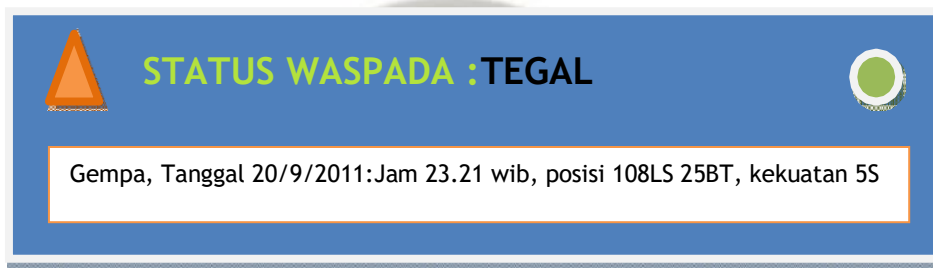
Information:

- 1) disaster logo / symbol - the symbol of the disaster code (disaster_code) in accordance with the Symbol Table for each disaster that exists.
- 2) disaster authority logo / symbol - the symbol of the authority in accordance with the disaster authority table.

- 3) disaster area status - The status of the disaster area that corresponds to location_type_code according to the code table type of disaster level (location_type_code). The status of the disaster area is written in green font
- 4) location of the disaster area - char_location_code.
- 5) type of disaster - char_disaster_code.
- 6) date and time of the disaster event - char_disaster_date.
- 7) position of the disaster event - char_disaster_position.
- 8) characteristics of disaster events - char_disaster_characteristic.
- 9) information / advice for disaster areas- char_information_message.

Note:

- 1) the syntax codes used in this appendix use the available reference tables
- 2) disaster symbol, authority symbol, and status of disaster area stored in digital broadcast television receiver (DVB-T2) tools and devices
- 3) the display with alert status can also be displayed in RUN TEXT mode, as shown in the following image:



← Walking text direction

EWS message display template on the TV screen with the status of WASPADA (alert) running text mode

- 1) The type of character letters is determined using Arial letters whose size is adjusted by each manufacturer.
- 2) ID for TS with Early Warning System (EWS) content

Determination of the ID contained in the TS EWS as follows:

- a. Program ID EWS : 911 = 0x38F
- b. Paket ID EWS : 128 = 0x80
- c. Service Type : 128 = 0x80
- d. Elementary Stream ID : 128 = 0x80

Determination of the EWS ID as a special ID, so that its use does not clash with the use of the service ID of the MUX provider, and the determination of the EWS ID can be used by the digital broadcast television (DVB-T2) equipment and receiver industry in the EWS data filtering process.

The information on the EWS ID is as follows:

- 1) Program ID EWS: is PMT PID from Transport Stream
- 2) Package ID EWS: is the ID of the data package contained in the PES EWS
- 3) Service Type: is the type of package content, in the form data, audio or video for Service type EWS declared as private data.
- 4) Package ID and Program ID may not be the same.

d. Location_code change

Changes in the content of the Disaster location code are given in the form of BCD Binary Code (Binary Code Decimal) with a data length of 24 bits. For example as follows:

In the disaster location data with code 43567, the data series sent are:

4 3 5 6 7 ---> 0x4 0x3 0x5 0x6 0x7 0xF
4bit 4bit 4bit 4bit 4bit 4bit

Where the remaining 0xF is as a 4bit backup, which can be ignored.

e. Procedure for displaying and executing location codes from digital broadcast television (DVB-T2) devices and receiver devices.

The Location Code filling menu must be displayed when the digital broadcast television (DVB-T2) receiver and device and the EWS feature are first run by the user.

- 1) users can easily enter the location code of the digital broadcast television (DVB-T2) device and receiver for 5 (five) Digit location codes according to the location of the local postal code.
- 2) digital television broadcast receiver (set-top-box) aids and digital broadcast television receiver also provide a postal code replenishment and location menu that can be accessed at any time by the user, if the user wants a change in his location code.

f. Procedure for displaying disaster events

- 1) digital broadcast television receiver (DVB-T2) equipment and device featuring EWS display Disaster Information if the location code of digital television receiver and equipment (DVB-T2) matches the area of the disaster area location code contained in the EWS data.
- 2) the device must not respond to any type of remote control button activity when detecting and displaying EWS information that contains information that is of the CAUTION and ALERT status, the rules do not apply to the CAUTION condition
- 3) digital broadcast television receiver (DVB-T2) equipment and devices with EWS features are not allowed to run alarms and display disaster information before the processing and filtering of EWS information carried out by these devices successfully receives and processes all tables / data / content from data EWS sent by disaster authorities.



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- 4) digital broadcast television receiver (DVB-T2) equipment and device with EWS feature when conditions (currently) displaying disaster information will stop displaying the disaster information if there is a change in package_id with value of 0XFF and the area of the disaster location code does not match the area code location device.

