

ASEAN東協地面數位電視廣播 標準與檢測法規



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ASEAN Countries DTV Terrestrial Standard

Country	Terrestrial Digital TV Standard
汶萊Brunei	DVB-T and DVB-T2
柬埔寨Cambodia	a) DVB-T from Europe; and b) T-DMB (Terrestrial - Digital Multimedia Broadcasting, Korea TV System); and c) DTMB (Digital Terrestrial Multimedia Broadcast, Chinese TV System)
馬來西亞Malaysia	DVB-T2
印尼Indonesia	DVB-T2
緬甸Myanmar	DVB-T and DVB-T2
菲律賓Philippines	a) ISDB-T (Integrated Services Digital Broadcasting, Japan TV System); and b) DVB-T2
新加坡Singapore	DVB-T2
泰國Thailand	DVB-T2
越南Vietnam	DVB-T and DVB-T2

From: DVB-T2 Integrated Receiver Decoder Technical Specification for ASEAN

ASEAN Receiver Compliance Test

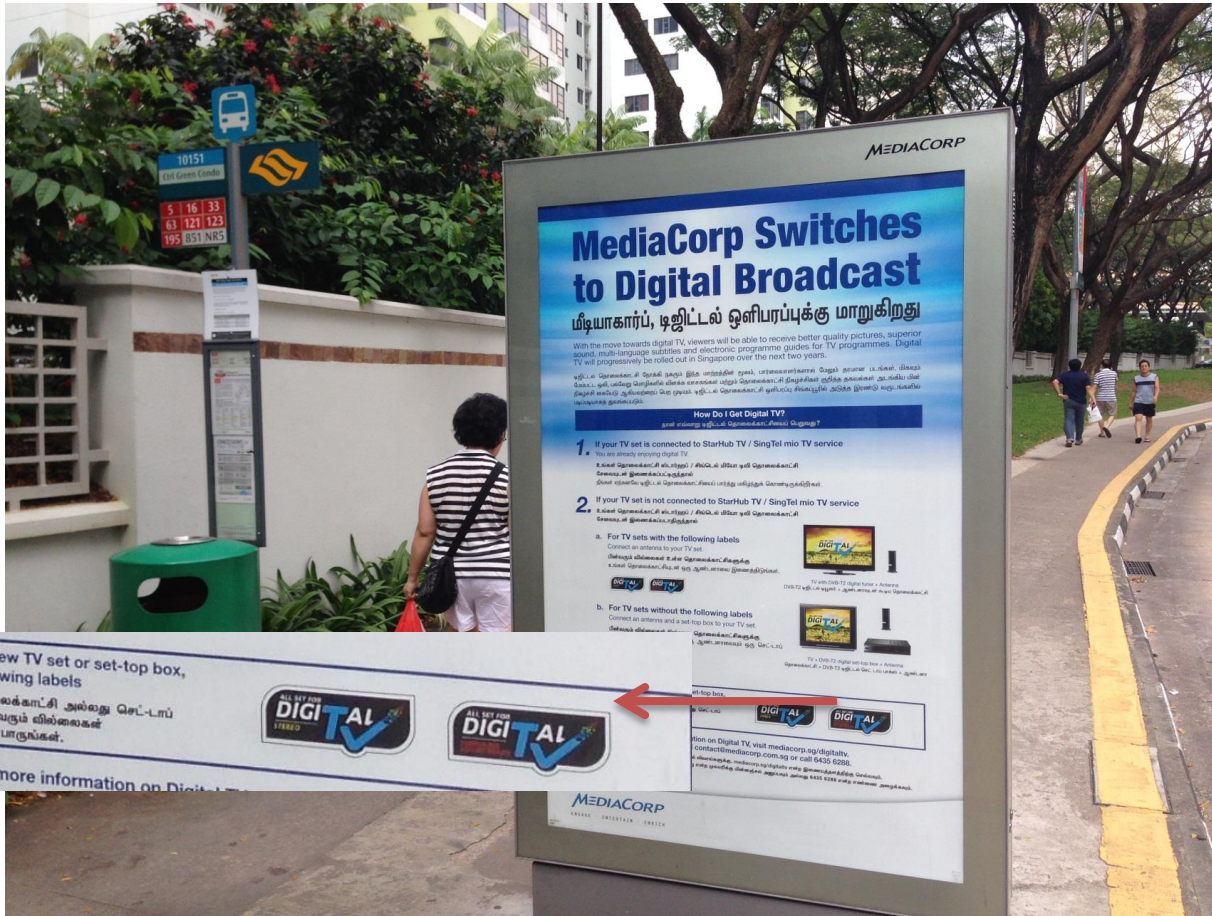
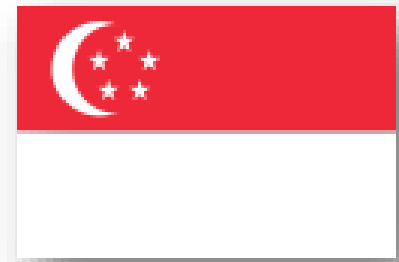
County	Standard	Note for Receiver Compliance Test
Thailand	NBTC DVB-T2 Receiver Specification	
Singapore	DVB-T2 IMDA Receiver Specification	
Vietnam	VNTA DVB-T2 Receiver Specification	VNTA, Vietnamese Authority defined receiver test Specification, referred to NorDig v2.2.3
Malaysia	SIRIM DVB-T2 Receiver Specification	It's defined under Malaysia Technical Standard Forum Multimedia Terminal(MMT) Technical Standard who is registered by MCMC to work on technical Standards
Indonesia	MCIT DVB-T2 Receiver Specification	Receiver Specification is released with dedicated EWS implementation.

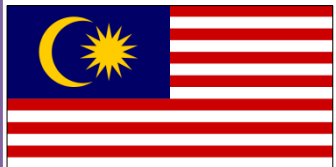
From: DVB-T2 Integrated Receiver Decoder Technical Specification for ASEAN

ASEAN Developing DTV Standard Specialist

Country	Developing the DTV Technical Specification Specialist
汶萊Brunei	Radio Televisyen Brunei, RTB
馬來西亞Malaysia	Malaysian Communications and Multimedia Commission, MCMC; and Malaysia Technical Standard Forum Berhad, MTSFB; and Radio Televisyen Malaysia, RTM
印尼Indonesia	Ministry of Communication and Information Technology, MCIT
緬甸Myanmar	Forever Group Co. Ltd
新加坡Singapore	Media Development Authority, MDA; and MediaCorp Pte Ltd
泰國Thailand	National Broadcasting and Telecommunications Commission, NBTC
越南Vietnam	Ministry of Information and Communications, MIC

DVB-T2 Singapore





Country	Digital Terrestrial Broadcast Standard
Malaysia	DVB-T2, v1.2.1 Confirmed



Target

National DVB-T2 Rollout. The plan is have 98% population coverage

Rollout Plan

- Target Digital Switch Over is 2015 but very tight.
- From 2014-2016, first 3 T2 Muxes will be commercially deployed.

- From 2016-2020, another 5 T2 Muxes will be deployed.

DSO: from 2015 to 2018 (maybe 2020)

Trial Status

- No T2 trial but DVB-T Trial started 2006 till now. 5kW Tx in KL. Now off air.
- 2 Mux DVB-T trial, with 7 SD Channel

Receiver Compliance Test

- It's defined under Malaysia Technical Standard Forum, Multimedia Terminal (MMT) Technical standard who is registered by MCMC to work on technical standards.
- Initial 2 million set top box. (Korean manufacturer)



Country

Digital Terrestrial Broadcast Standard

Vietnam

DVB-T2, v1.2.1 Confirmed



Target

National DVB-T2 Rollout, while, only 450K STBs distributed, or 0.5% of household coverage by 2013.

Rollout Plan

- Private owned operator AVG started T2 from 2011, 60 programs in 3 T2 Muxes. Total 11 Transmitter sites over country
- VTV starting from 2013, cover Hanoi, Ho Chi Minh, Da Nang, Can Tho, Hai Phong, 01 Tx per site, 10 program, 2HD

- AVG still expand coverage 10 cities, VTV with 20 cities until 2015 and all province in 2018

DSO: from 2015 to 2018 (maybe 2020)

Trial Status

- Trial in following City: Hanoi, Ho Chi Minh, Da Nang, Hai Phong, Nam Dinh, Can Tho, Tien Giang, Dong Thap.
- At least one T2 Mux: 2 HD + 18 SD services per Mux

Receiver Compliance Test

- VNTA, Vietnamese Authority defined receiver test specification, referred to Nodig v.2.2.3.
- Compulsory test is NOT reinforced yet, but expected certification test to be launched in 2014-2015



Country	Digital Terrestrial Broadcast Standard
Thailand	DVB-T2, v1.2.1 Confirmed, Trial with v1.3.1



Target

National DVB-T2 Rollout, intend to have 100% penetration rate

Rollout Plan

- 6 T2 Mux, shared among major broadcasters.
- Start with big cities, e.g., Bangkok area and Chiang Mai area
- Major broadcasters setup T2 trial with support of receivers, 1million+ STB/iDTV have been sold in Thailand by 2014.

T2 trial will expand to other cities.

DSO: from 2015 to 2018 (maybe 2020)

Trial Status

- Trial started from Bangkok and Chiang Mai from 2012-2013
- 6 T2 Mux can be found in Bangkok area, occasionally the T2 configuration is not full compliant to T2 standard.

Receiver Compliance Test

- NBTC, official test lab was set up by 1st Qtr, 2015
- Self-declaration is required for getting NBTC logo, test includes EMC, Safety and Digital TV certification. NBTC test lab might reinforce certification test in 2015.

Country	Digital Terrestrial Broadcast Standard
Indonesia	DVB-T2, v1.2.1, might select v1.3.1



Target

National DVB-T2 Rollout, while, maybe only 1% of population will watch Terrestrial TV.

Rollout Plan

- In 2012, T2 trials started in Java and Batam islands, covering around 60% of the island.
- In 2013, T2 trials will extend to Aceh Province and South Borneo Area.

Indonesia T2 roll out will start from big islands and extend to other islands. The progress won't be very fast.

DSO: 2018 (may be later)

Trial Status

- Trial starts with one T2 Mux, carried 3-4 SD programs.
- Trial is intermittent on air, while operator and regulator need to test the coverage.

Receiver Compliance Test

- Receiver specification is released with dedicated EWS implementation.
- Country plans to import 6 millions STB to support the T2 roll out but not happen yet because of no proper compliance test.

Brief on ASEAN Country Spec

- Reference to Nordig
- Customized according to local requirement



4 profiles, MPLP, L1 Post scramble, Multi-language support for 4 languages and QAA
AFD, HE-AAC, LCNv1 and v2, Huffman encoding



5 profiles, MPLP, L1 Post scramble, Multi-language support for 4 languages and QAA
LCN, Stereo audio and multi channel surround sound



MPLP, 2 languages for subtitle and audio, and QAA, LCN Thailand profile, SSU



MPLP, 2 languages , support of DVB-T and DVB-T2



Maybe, T2 Base + T2 Lite, EWS

Official Test Suite- IMDA, SIRIM

IMDA , Singapore

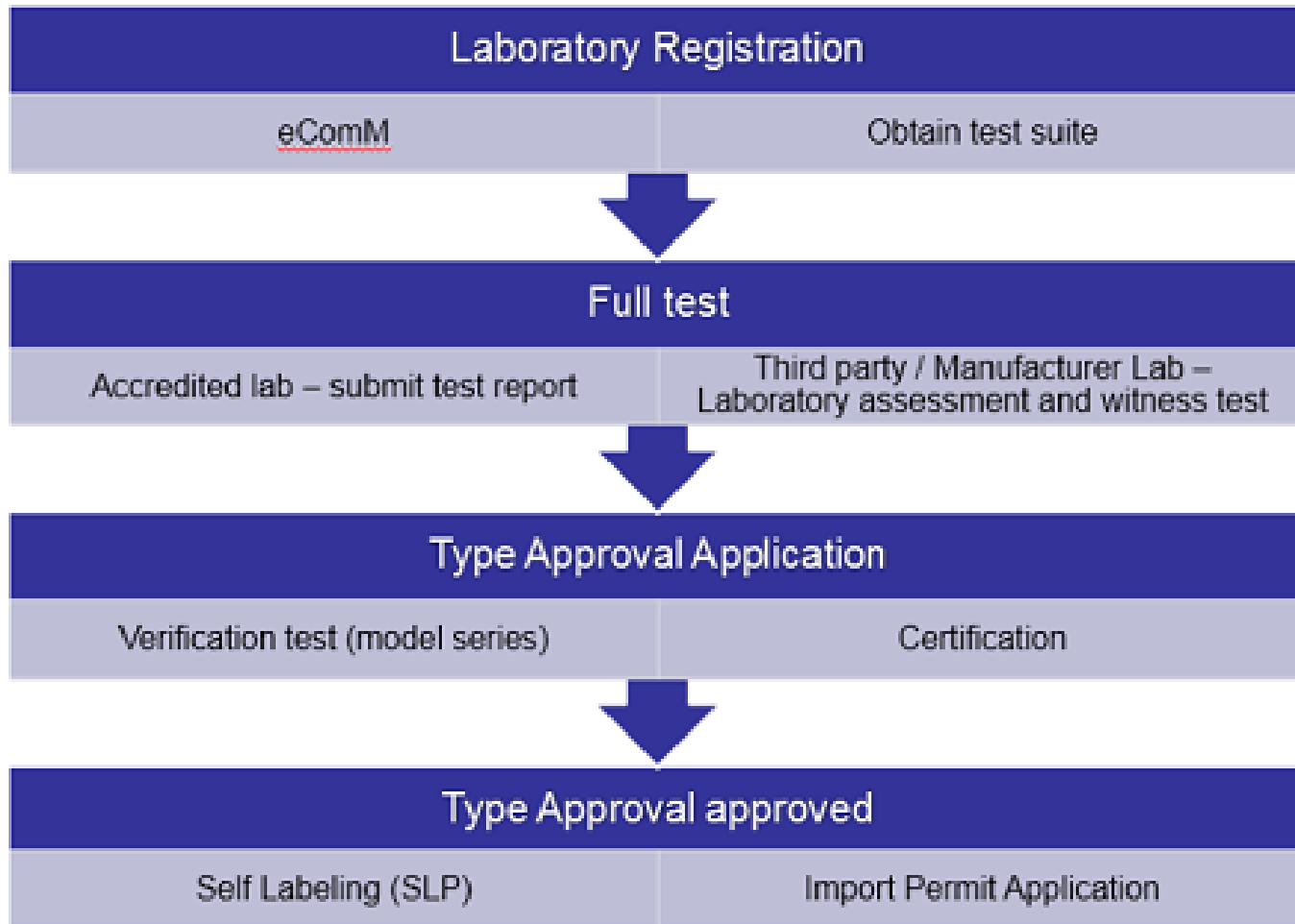


SIRIM , Malaysia



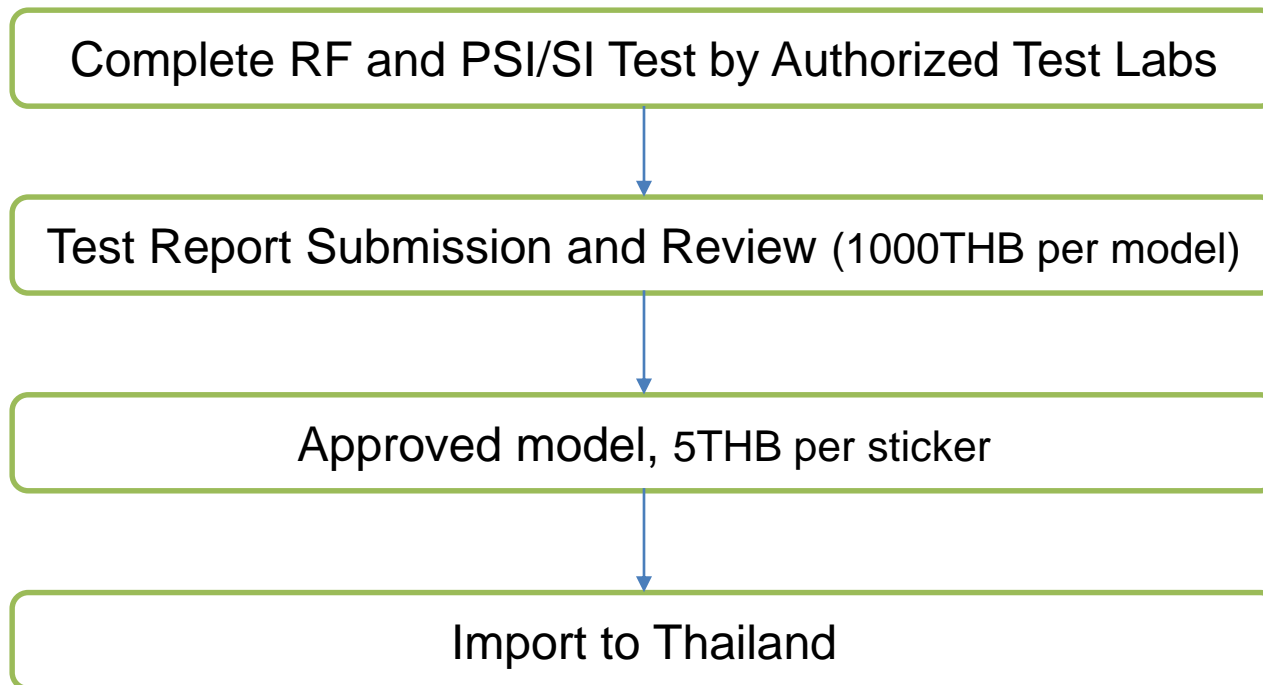
Certification Procedures - Example

- SIRIM, Malaysia



Certification Procedures - Example

- Thailand NBTC



Similar procedures can be found in Singapore as well.

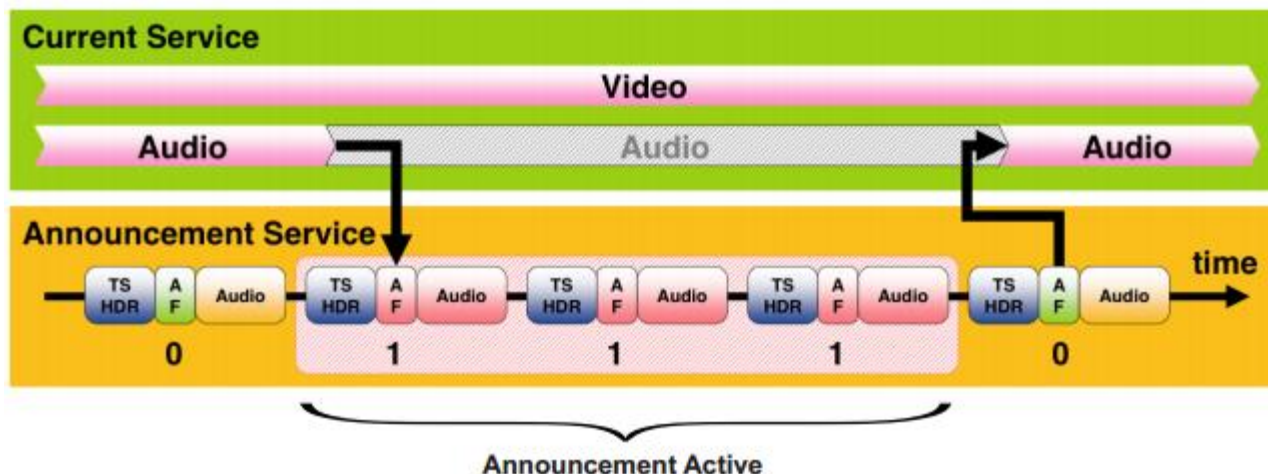
Importance of EWS

Date	Place	Fatalities	Magnitude
Dec. 26, 2004	Off northwest coast of Sumatra, Indonesia	300,000	9.3
Feb. 22, 2005	Zarand, Iran	Over 500	6.4
Mar. 28, 2005	Northern Sumatra, Indonesia	1,000-2,000	8.7
Oct. 8, 2005	Kashmir, Pakistan	100,000 (estimated)	7.6
May. 26, 2006	Java, Indonesia	Over 6,000	6.3
July. 17, 2006	Java, Indonesia	Over 500	7.7

DVB Emergency Warning System (EWS)

The announcement can be broadcast in four different ways:

1. In the usual audio stream of the service
2. In a separate audio stream that is part of the service (Component tag identifies the announcement channel)
3. In a different service in the same transport stream (Service_ID and component tag identify the announcement channel)
4. In a different service in a different transport stream (Original_Network_Id (ON_ID) and Transport_Stream_ID (TS_ID) identify the announcement channel)



EWS Indonesia Practice

- **EWS = Early Warning System**



Information shall be communicated:

- a. authorities sender disaster information
- b. type of disaster
- c. time of the disaster
- d. position of the disaster
- e. characteristics of disaster
- f. message or description of the disaster
- g. status of the catastrophic
- h. locations potentially affected

*Badan Meteorologi, Klimatologi dan Geofisika (BMKG): Authority Meteorology, Climatology and Geophysics

**Badan Nasional Penanggulangan Bencana (BNPB): Authority National Countermeasures Disaster

EWS Indonesia Practice

- **Three sub-tables were defined as**
 - *Table Region of Disaster Warning*
 - Three levels of disasters

Awas	Caution
Siaga	Standby
Waspada	Alert

EWS Indonesia Practice

- Table Code of Disaster Warning*



Earthquake



Drought



Extreme weather



Tsunami



Land and Forest
Fires



Technology failure



Volcano Eruption



Erosion



Epidemics
and Disease
Outbreaks



Soil movement



Building and
Housing Fire



Social conflict



Flood



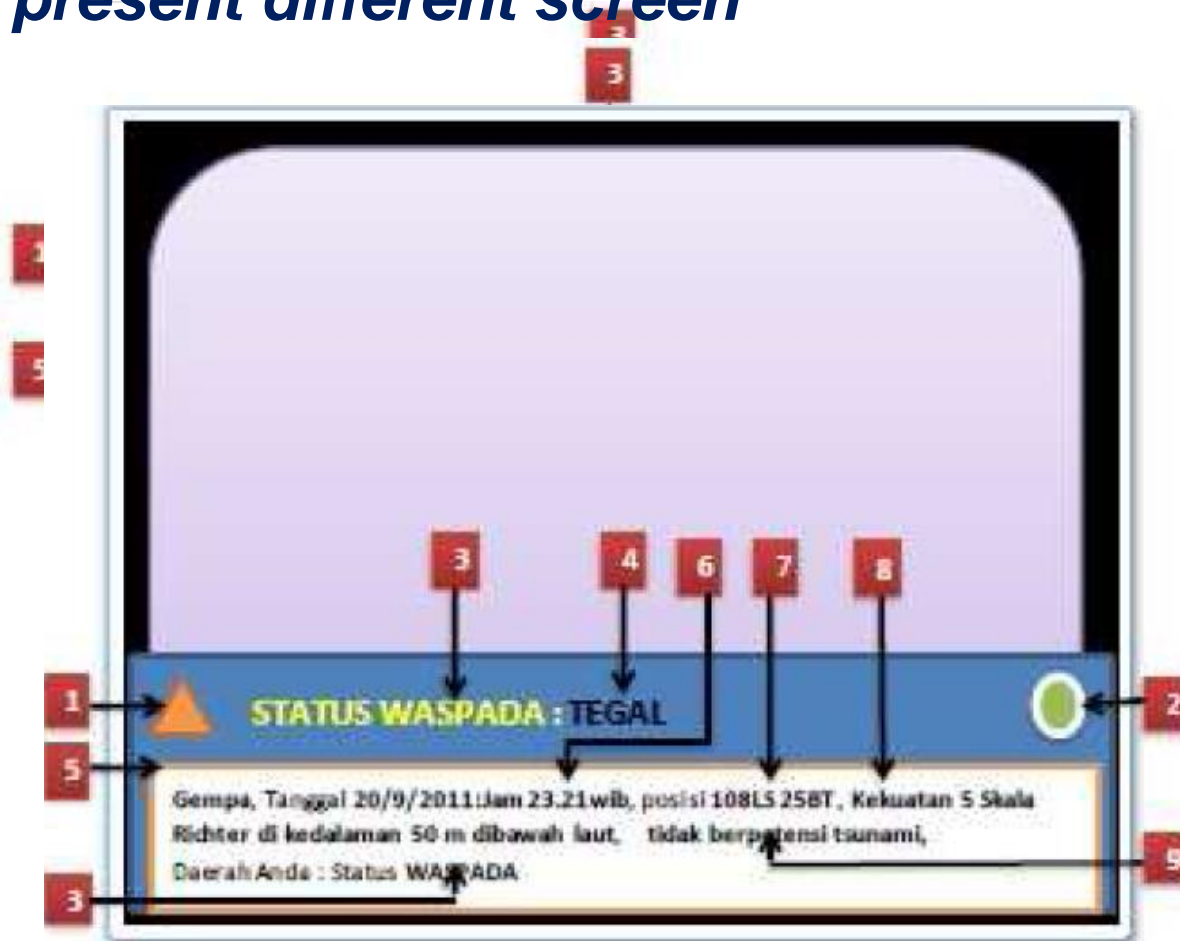
Extreme waves



Reserve

EWS Indonesia Practice

- *Table Message of Disaster Warning : iDTV/STB should present different screen*



EWS Indonesia Practice

Description ID EWS is as follows:

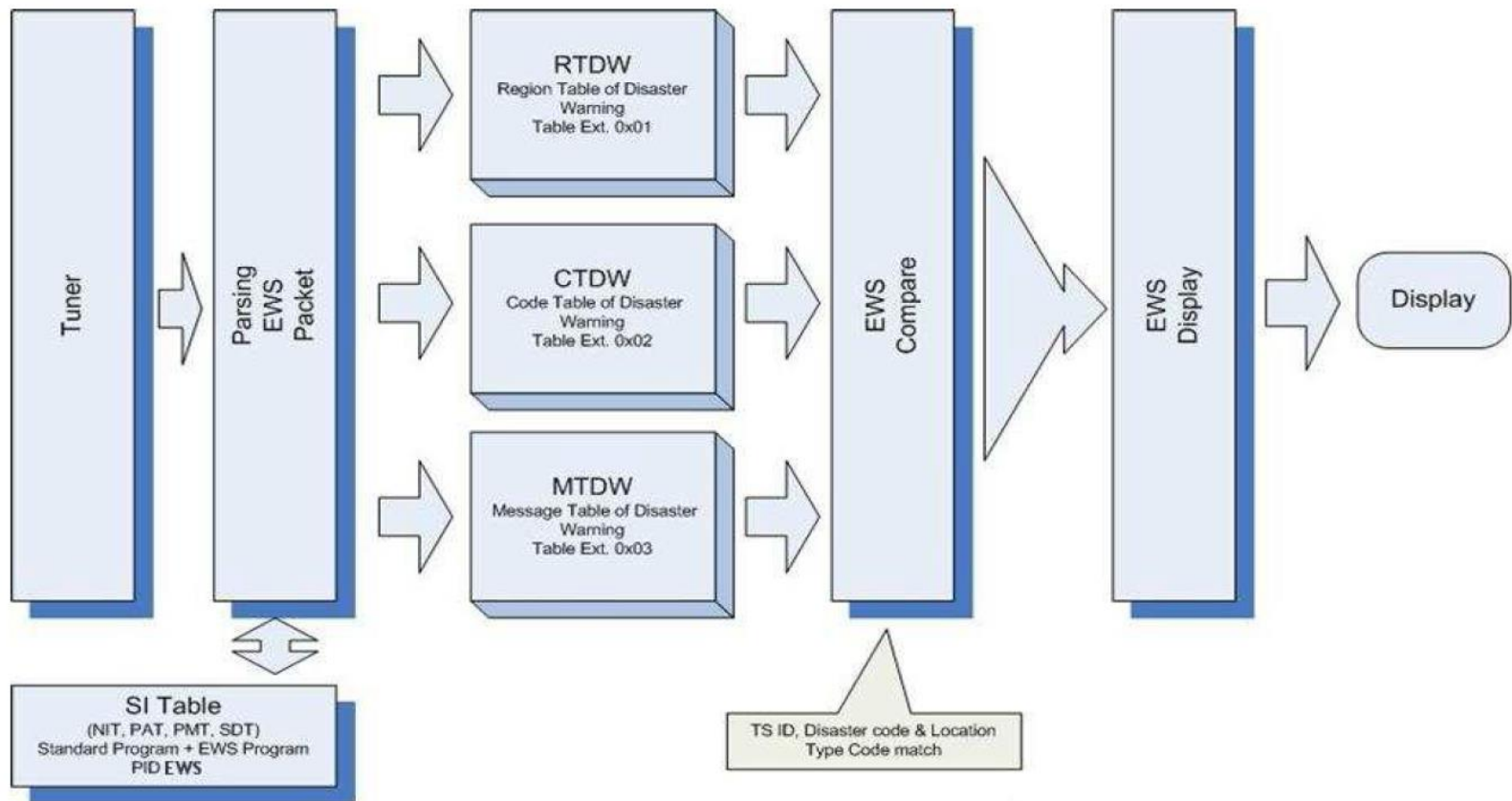
- 1) Program EWS ID: is the PMT PID of the Transport Stream
- 2) Package ID EWS: is the ID of the data packets contained in PES EWS
- 3) Service Type: is the type of content packages, such as data, audio or video for Service type EWS declared as private data.
- 4) Package ID and Program ID must not be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

TS ID contained in the EWS as follows:

- 1) Program EWS ID: 911 = 0x38F
- 2) Package EWS ID: 128 = 0x80
- 3) Service Type: 128 = 0x80
- 4) Elementary Stream ID: 128 = 0x80

EWS Indonesia Practice

- Early Warning System (EWS)



THANK YOU

