TPEG2-EAW main message, key facts and figures

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TPEG2-EAW main message

TPEG2-EAW communicate emergency warnings to travelers with maximum information for minimum (driver) distraction :

- by location-aware information and instructions
- in their spoken language of choice
- Advising a detour around the affected area if possible
- adhering driver safety

Key effectiveness elements for dissemination via TPEG2-EAW

- Timely emergency warnings
- Focus on travelers (also foreigners)
  - Targeted instructions,
  - Location-aware
  - Multi-language
- Avoid driver distraction
- Integrateable with navigation and routing to provide safe routes, detouring the danger area
- Usable also without a digital map on board
  - e.g. for an in-vehicle DAB radio with GPS receiver,
- Multi-channel delivery (DAB and mobile internet)

Problem statement

How to inform travelers of an emergency situation?

Travelers:

- Should not use cell-phone while driving, eyes need to be on the road mostly
- May not necessarily be familiar with the local cities and towns
- May not speaking the local language (visiting, or foreign-language inhabitants)
- Could be better off detouring the affected area, rather than go through a danger area.

Solution

- Target travelers, and drivers with a new additional dissemination channel of standard emergency warnings
  - Closely aligned with how alerting authorities issue warnings, and their warning content
- Location-aware, integrated in navigation system & routing engine when feasible
- Multi-language
- Multi-channel delivery (DAB and mobile internet)
- Respecting driver safety and HMI guidelines for safe driving

Sample Navigation System displays (NNG)

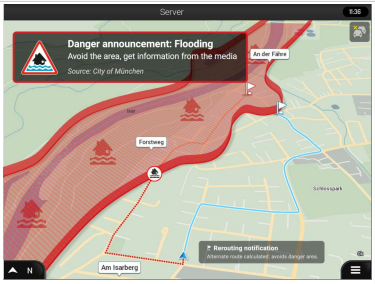

Image courtesy NNG

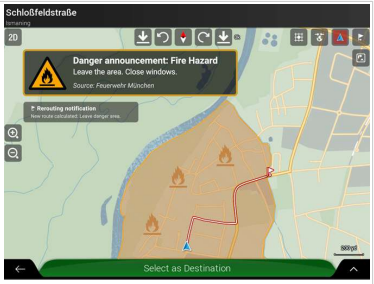

Image courtesy NNG

Video NNG prototype

https://www.youtube.com/watch?v=DQSrTSAo87M

Press-releases

BBK: https://www.bbk.bund.de/SharedDocs/Pressemitteilungen/DE/2021/10/pm-warnungen-direkt-ins-auto-tpeg.html
TISA: https://itsworldcongress.com/wp-content/uploads/2021/09/20210928-TPEG2-EAW-trial-PressRelease-FINAL-with-image.pdf
NNG: https://www.nng.com/newsroom/press-releases/tpeg-based-public-emergency-alerts/

Press (as of 28.10.2021)

- https://www.pcwelt.de/news/Katastrophen-Warnungen-direkt-ins-Auto-via-Navigationsgeraet-11114211.html
- https://www.behoerden-spiegel.de/2021/10/13/neuen-warnkanal-erschlossen/
- https://www.mdr.de/nachrichten/deutschland/panorama/warnungen-bevoelkerung-auto-navi-leitstelle-katastrophenschutz-100.html
- https://www.leine-on.de/region/nachricht/38692-warnung-von-leitstellen-direkt-ins-auto.html
- https://www.feuerwehrmagazin.de/nachrichten/news/warnungen-kuenftig-auch-an-das-navi-110588
- https://kreis-ahrweiler.de/katastrophenschutz-warnungen-zukuenftig-direkt-ins-auto/
- https://www.infosat.de/dm/dm20211022.pdf?utm_source=newsletter&utm_campaign=dmplus&utm_medium=email#nameddest=schlagzeile156739
- https://www.focus.de/perspektiven/flutreporter/flut-folgen-im-news-ticker-wasser-stand-14-meter-hoch-von-flut-schwer-getroffene-bundesstrasse-nun-wieder-frei_id_24330822.html

TPEG2-EAW key facts and figures

- TPEG2-EAW provides a new dissemination channel for **informing Travelers of official Emergency Alerts and Warnings,** as issued by public authorities and/or authorized agencies
- TPEG2-EAW is designed for fit with the **Common Alerting Protocol (CAP)** which in use by public authorities as authorized agencies world-wide
  - ☑ TPEG2-EAW reflects CAP profiles from e.g. Australia, Canada, New-Zealand, Germany, and USA
- TPEG2-EAW provides l**ocation-aware warnings** by means of geographical areas
  - ☑ Travelers to **need NOT be knowledgeable on regional naming and locations** of affected towns and areas
  - ☑ Travelers can be issued **targeted notifications and warnings** when, i) inside affected areas, ii) outside the affected areas, and at the moments when iii) entering or iv) leaving the affected areas
  - ☑ Travelers can be **advised to take a detour** to avoid danger areas (when integrated with navigation systems)
- TPEG2-EAW **informs travelers in their own language** through standardised event and instruction codes (with corresponding phrases in multiple languages)
  - 261 standardised codes for events originating from Australia, Canada, New-Zealand, Germany, and USA
  - 163 standardised codes for instructions originating from Germany and USA
  - Additional free text in multiple languages can be provided
  - These standardised code lists for events and instructions are extensible for new needs
- TPEG2-EAW is **field-trial proven in Germany**
  - ☑ Shown to be effective in warning communication under emergency warning process of Germany.
  - ☑ Shown to be fit for transmission over Digital Radio (DAB), and Mobile Internet to vehicles
    - Tested by Germany's national radio broadcaster (ARD), by leading service provider TomTom, and by navigation system provider NNG, with support and tooling from GEWI and bmt
- TPEG2-EAW **can be quickly adopted by the industry** since it is part of **the TPEG2 series** (ISO 21219) for traffic and travel information services
  - TPEG2 series applications are in use by well over 100 million vehicles and navigation systems
  - TPEG-EAW is just an incremental add-on, next to applications for traffic information, weather public transport, fuel prices, electromobility,
  - TISA will submit TPEG2-EAW to ISO as an International Standard in the ISO 21219 series

Why a separate TPEG2-EAW application (and not in TEC)

- Warnings originate from NON-road Alerting Authorities (e.g. Police, Fire Depts, Security Authorities)
  - Their warnings need to be consistent through multiple dissemination channels and media
- Support needed for Alerting Authority message content
  - Key facts: What, What to do, Where, How Soon, How Bad, How Sure.
  - Context: Who Says, When, Relations (to other incidents), Actionable
- Hence, information content to be relayed should be closely aligned with the Common Alerting Protocol (CAP), used by Alerting Authorities world-wide
  - Common Alerting Protocol: http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html
  - Common Alerting Protocol intro: https://preparecenter.org/wp-content/uploads/2021/10/CAP-Intro-for-RCRC-Workshop-Oct-2021.pdf
  - Common alerting Protocol state of implementation: https://preparecenter.org/resource/cap-implementations-status-report/
- Such Emergency Warnings target the general public, should be also processable by non-navigation receivers (e.g. in-vehicle DAB radios with GPS receivers)
- Emergency warnings always are wide-area warnings, never issued on road sections (as many, if-not-most, TEC events)

TPEG2-TEC is ill-equipped to handle Common Alerting Protocol content. Thus integration in TEC would

- require extensive modification to TEC to ensure Emergency message consistency across multiple channels
- Furthermore, undesirably mix "non-official" road-side incidents with "official" Alerting Authority warnings.

TPEG2-EAW field Trial facts and figures

- Consortium of BBK, mecom, bmt, ARD, NDR, WDR, GEWI, NNG, TomTom, and Teatownlake
- Supported by TISA

Warnings in the German Modular Warning System (MoWaS)

German public warning statistics In 2020:

- 63 level 1 (highest priority) warnings,
- 367 level 2 (medium priority) warnings, and
- 1359 level 3 (lowest priority) warnings

NB level 3 warnings can be ignored, but sometimes also contain local WW2 bomb removal events with a closed-off area.