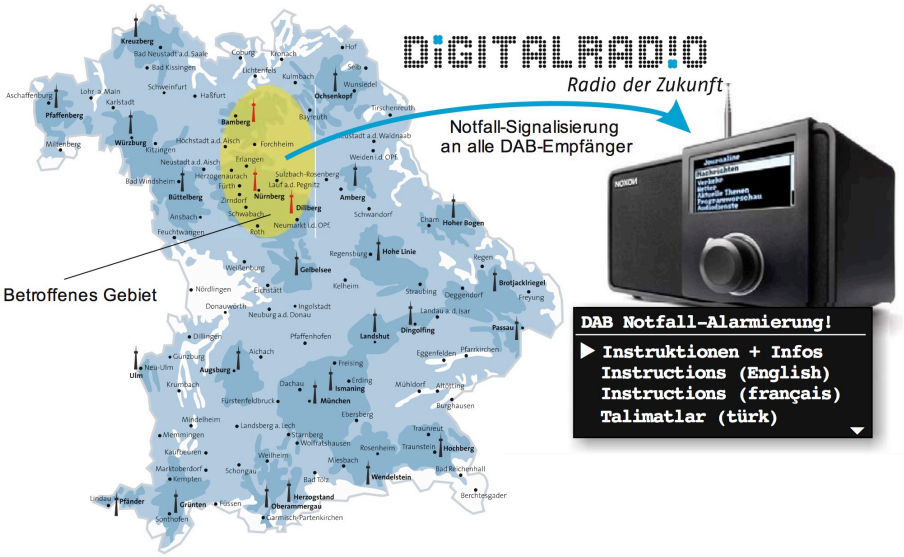
Emergency Warning on DAB+

EWF – Emergency Warning Functionality



EMERGENCY WARNING FUNCTIONALITY

Fraunhofer IIS

EMERGENCY WARNING ON DAB+

EWF – EMERGENCY WARNING FUNCTIONALITY

2nd June 2017

Fraunhofer
IIS

Olaf Korte
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Emergency Warning on DAB+

Broadcast is primary for emergency warnings

Bundesamt
für Bevölkerungsschutz
und Katastrophenhilfe

During the last years, many natural and technical catastrophes have demonstrated, that Broadcast is a very efficient warning and information system.

Additional warning mechanisms are required, that inform and "wake up" the public as early as possible via acoustical signals.

Source: flyer_satwas.pdf, 2008

DIGITALRADIO
Radio der Zukunft

Digitalradio includes all mechanisms, that are required to provide these additional warning mechanisms plus detailed, multilingual text information!

EMERGENCY WARNING FUNCTIONALITY

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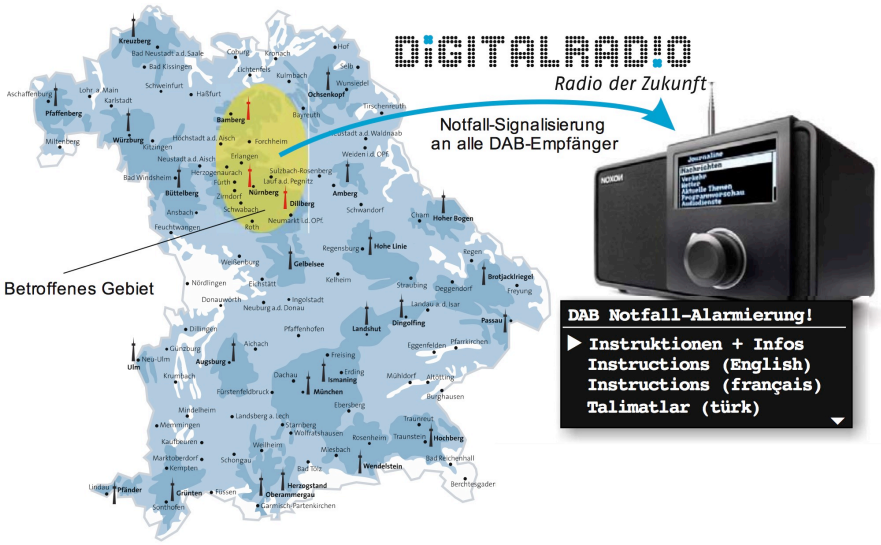
Emergency Warning on DAB+

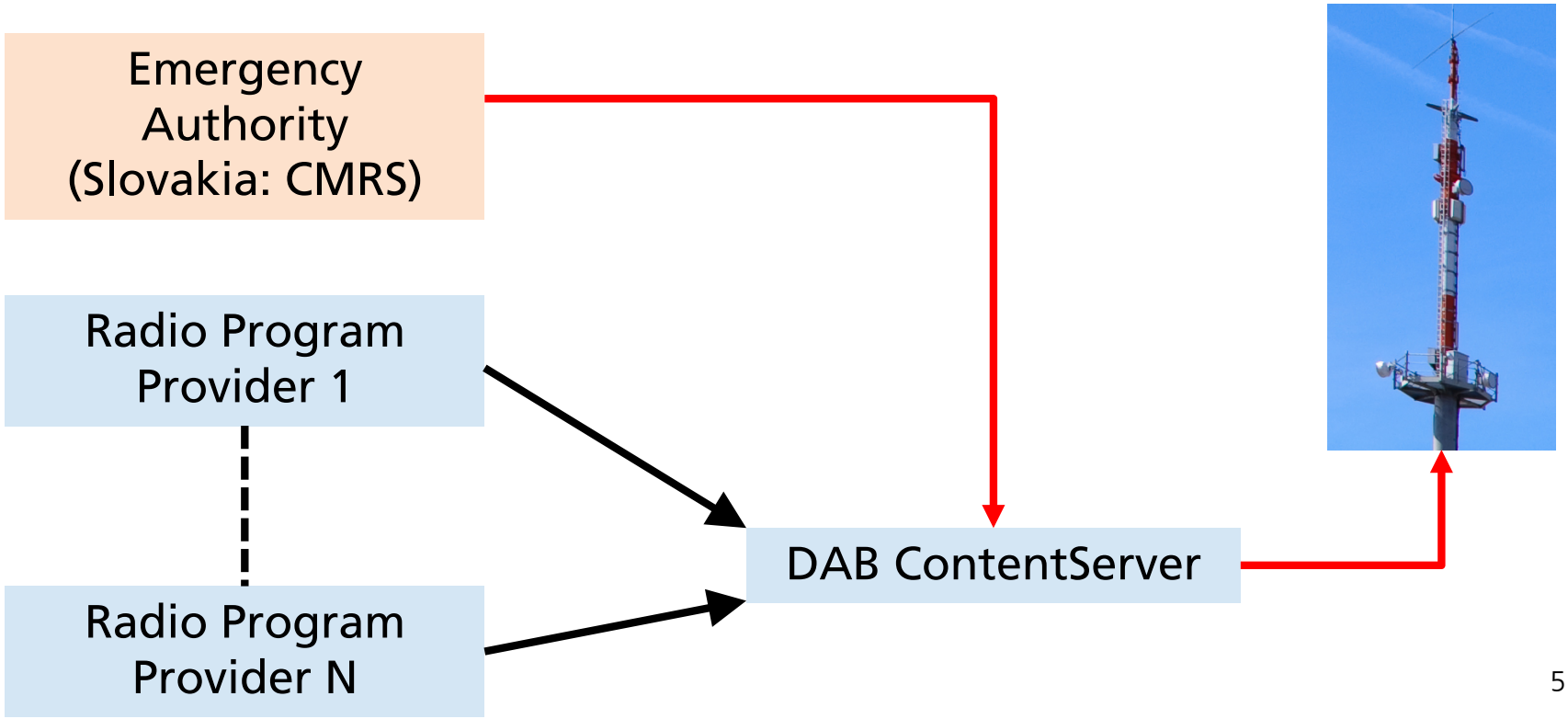
EWF – Emergency Warning Functionality



- **Automatic** Warning **Activation** on active receivers
- **Wake Up** and Warning Activation on standby receivers
- **Audio** and **Dynamic Label** short info
- **Detailed, multilingual text information**
  - → **Less** useless **emergency hotline**
  - → **Audibly disabled persons**
  - → **Reach foreign people in their own language**

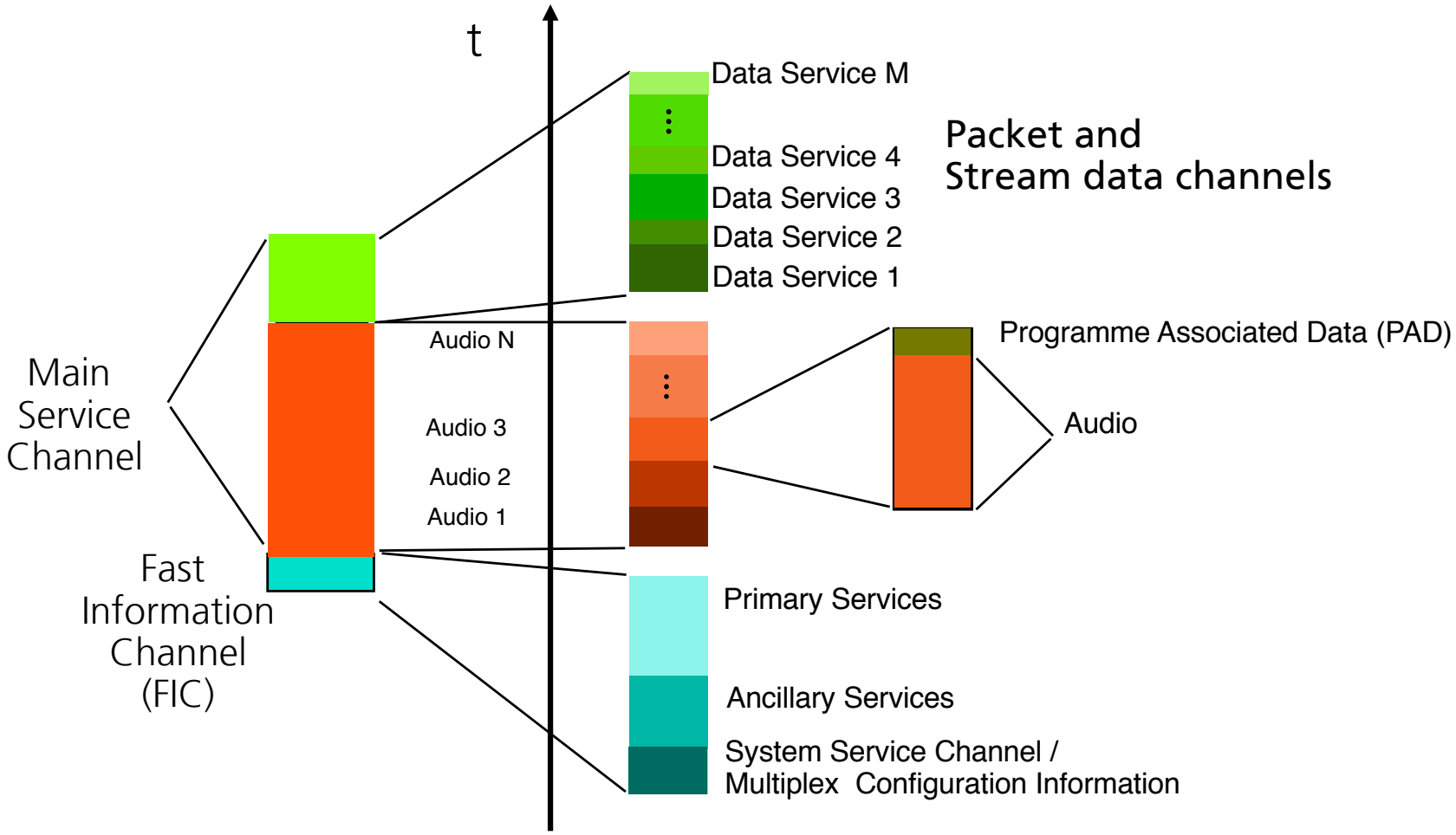
Emergency Warning on DAB+
EWF – Generating of Warning

- **Emergency Authority** generates content (Audio and Text)
  and enables the alarm directly at all Digitalradio-Multiplexers (DAB ContentServer), covering the affected region.
  → bypassing regular program providers puts Alarm **immediately on-air without any delay**

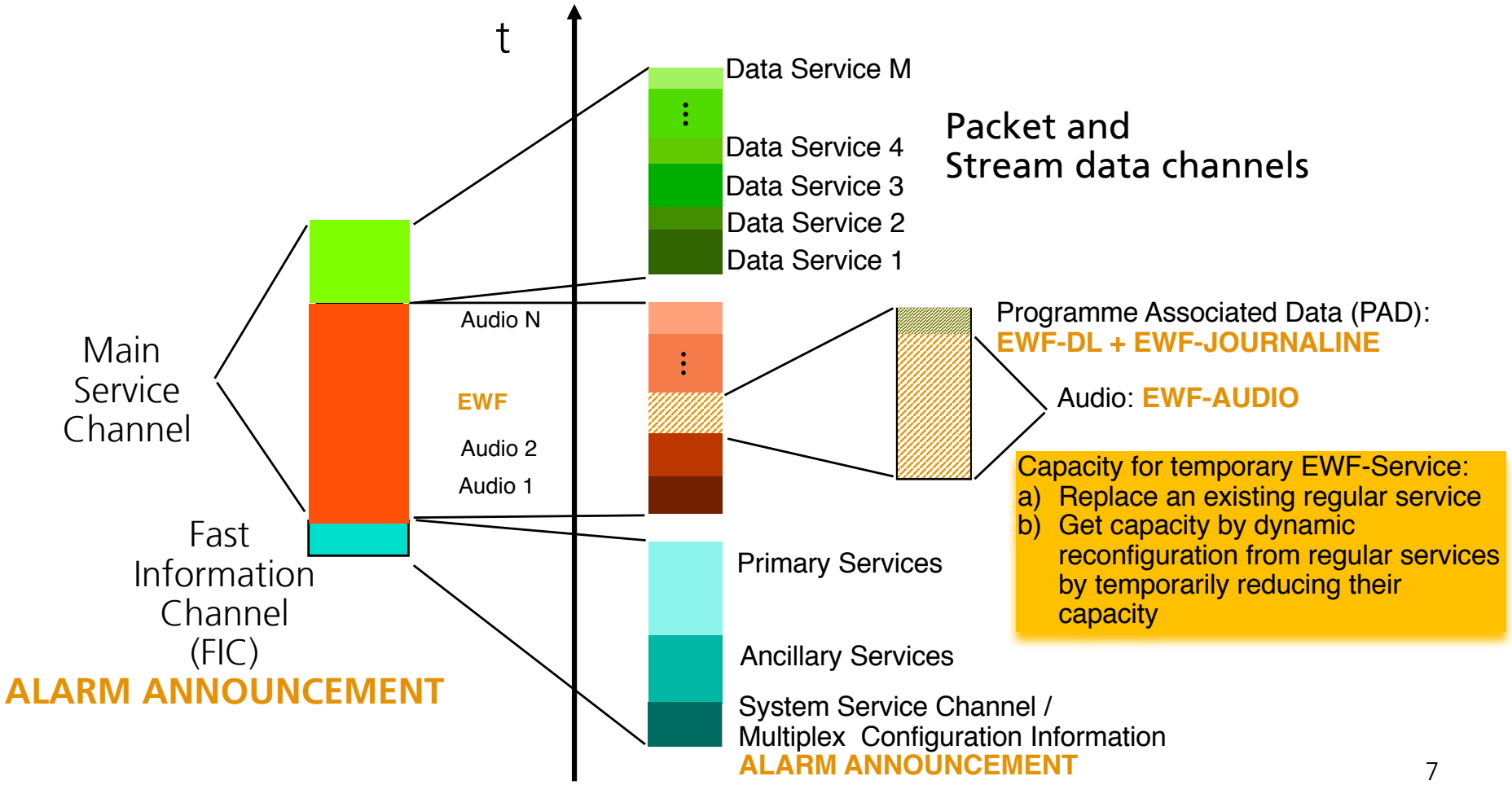


Emergency Warning on DAB+

DAB-Multiplex (regular transmission)

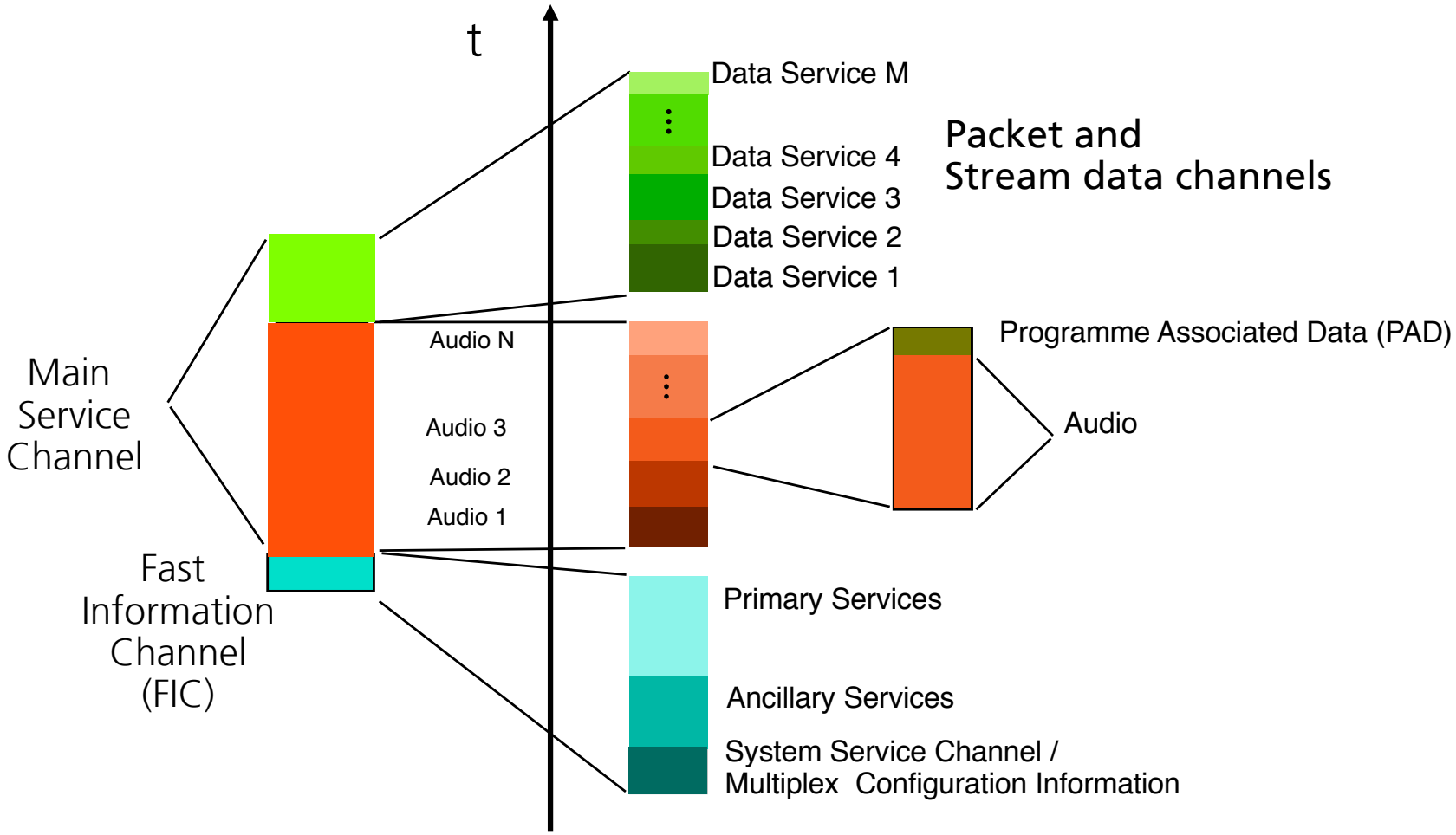


Emergency Warning on DAB+
DAB-Multiplex (during EWF-Alarm)



Fraunhofer DAB ContentServer Technolgie

DAB-Multiplex (back to regular transmission)



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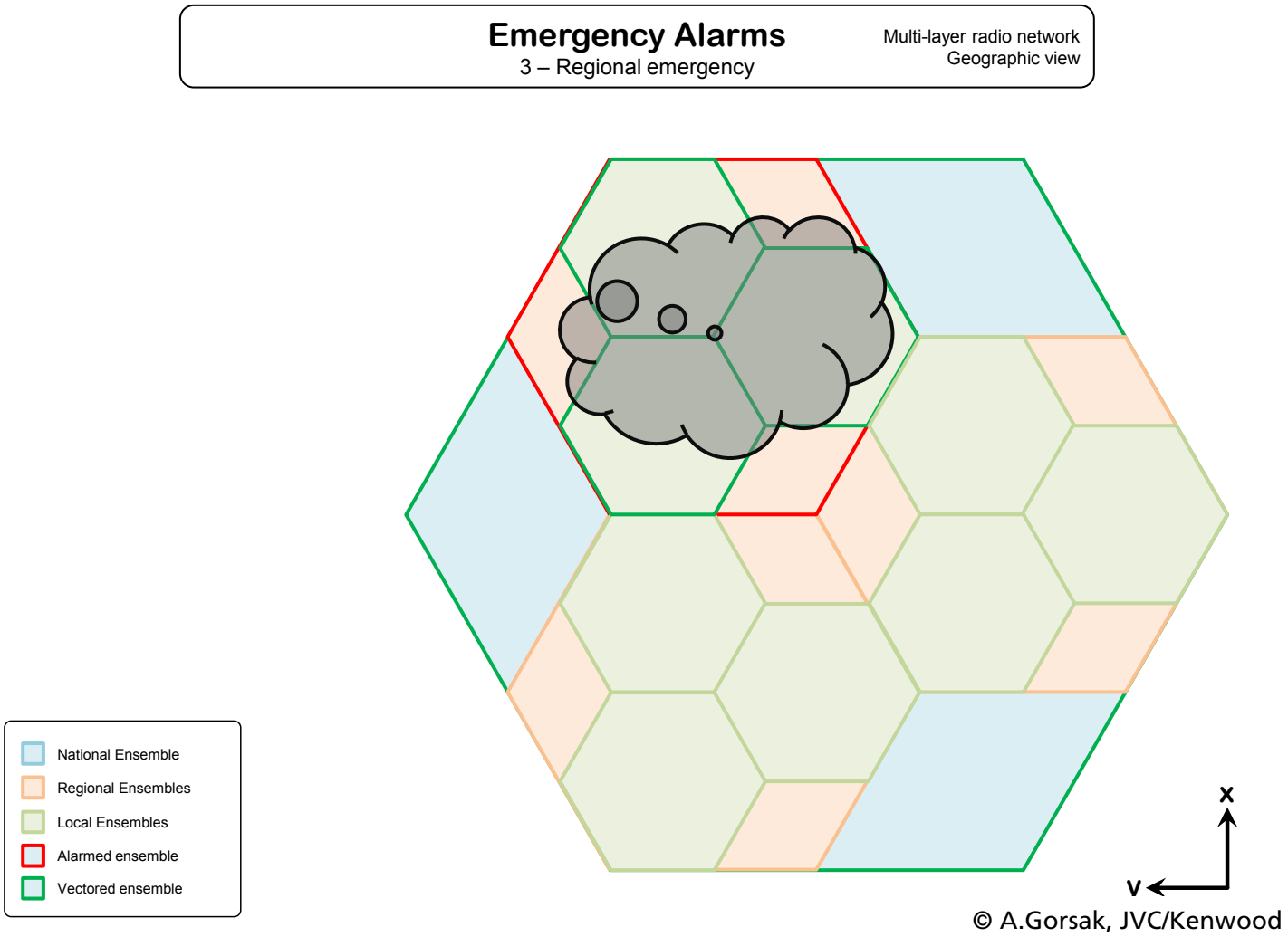
Emergency Warning on DAB+
Regional Alarm



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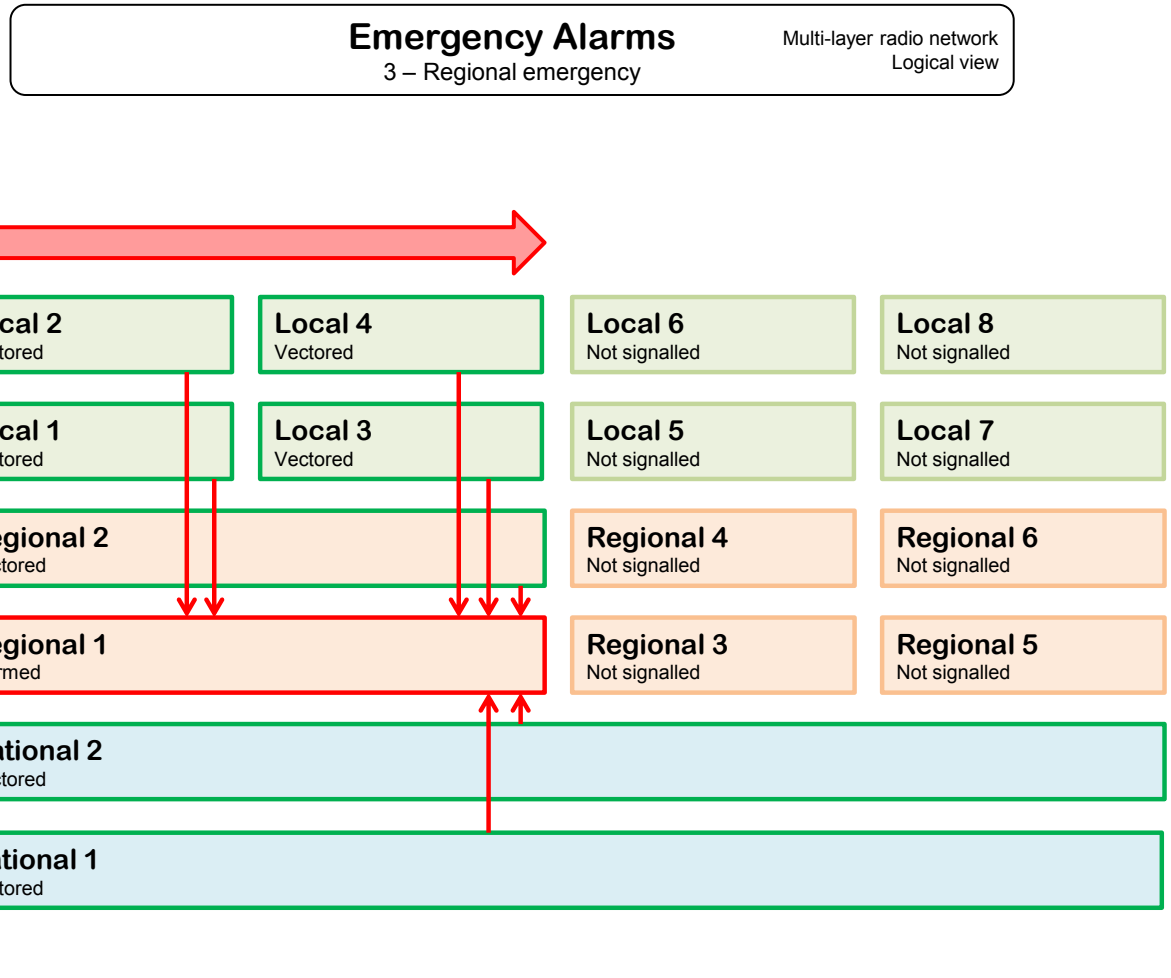
Emergency Warning on DAB+
Regional Alarm



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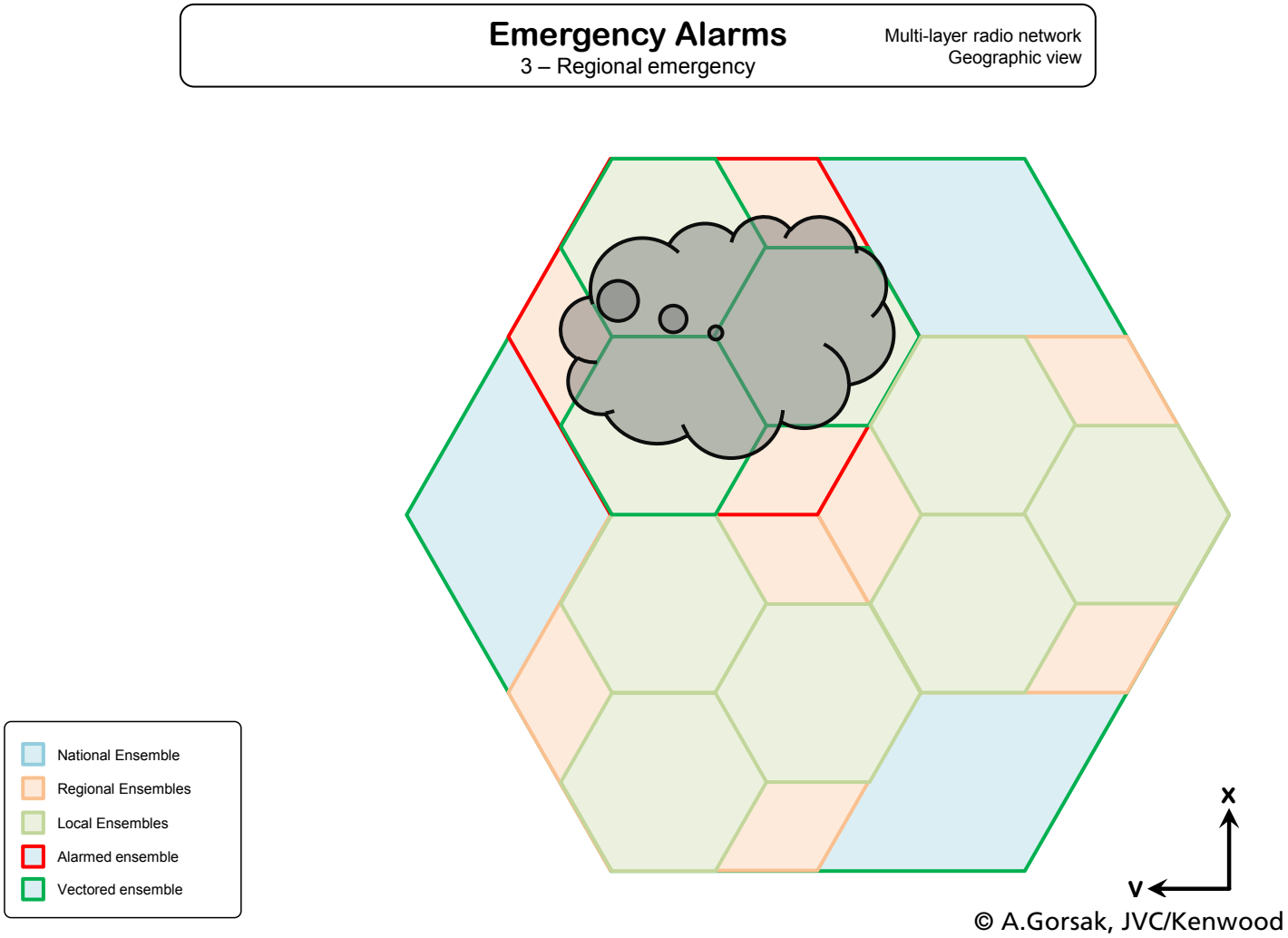
Emergency Warning on DAB+
Local Alarm



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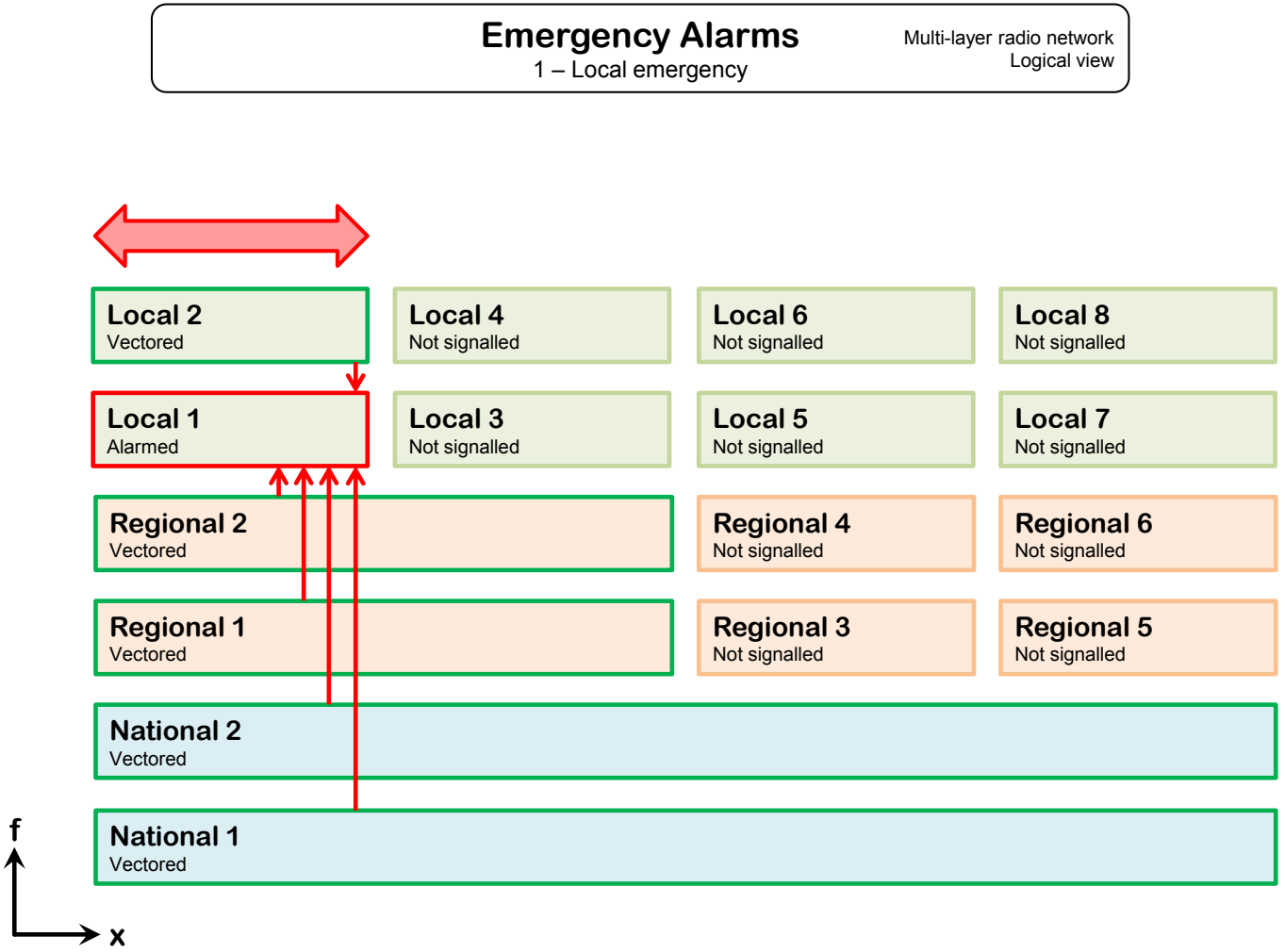
Emergency Warning on DAB+
Local Alarm



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Emergency Warning on DAB+

EWF – in case of an alarm …

EMERGENCY WARNING FUNCTIONALITY

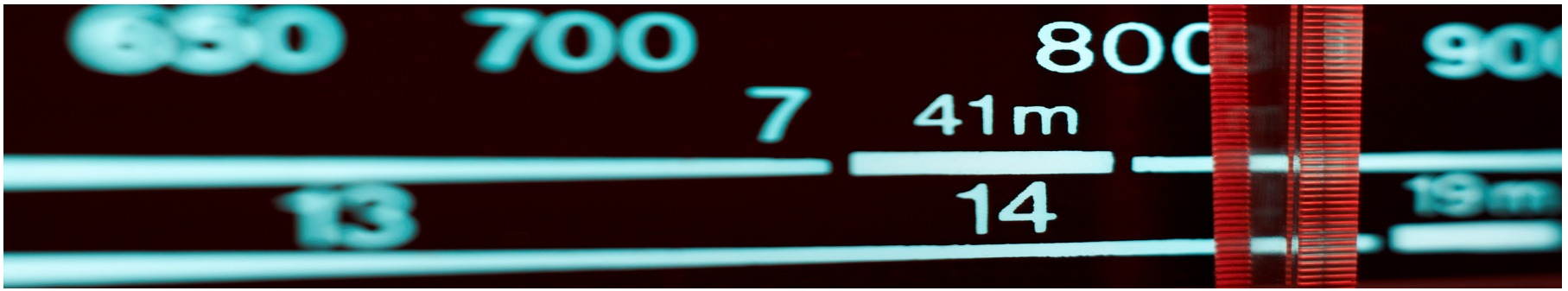
Emergency Warning on DAB+

First bavarian wide trial Nov 1st, 2014

Emergency Warning on DAB+
EWF – Current Status of Implementation

Transmission Side

- DAB Networks based on Fraunhofer ContentServer techonolgy are prepared for EWF
- Editor software for EWF authoring software exists
- Connection of alternative EWF authoring solutions to ContentServer can easily be realized



EMERGENCY WARNING FUNCTIONALITY

Fraunhofer IIS

Emergency Warning on DAB+
EWF – Current Status of Implementation

NOXON Journaline Mobile

NOXON Mini

- **Receivers**
- Available:
  NOXON Journaline Mobile, NOXON dRadio1, NOXON Mini, NOXON DAB-USB-Stick, some car radios (Alarm support, no Journaline)
- Autum 2017:
  NOXON Evo, PALONA Ramses
- 2018: More to come …

Kenwood car radio

- Other Receiver Manufacturers want to support EWF (DUAL, HAMA, Technisat, …)

New low cost models announced for 2018

NOXON Evo

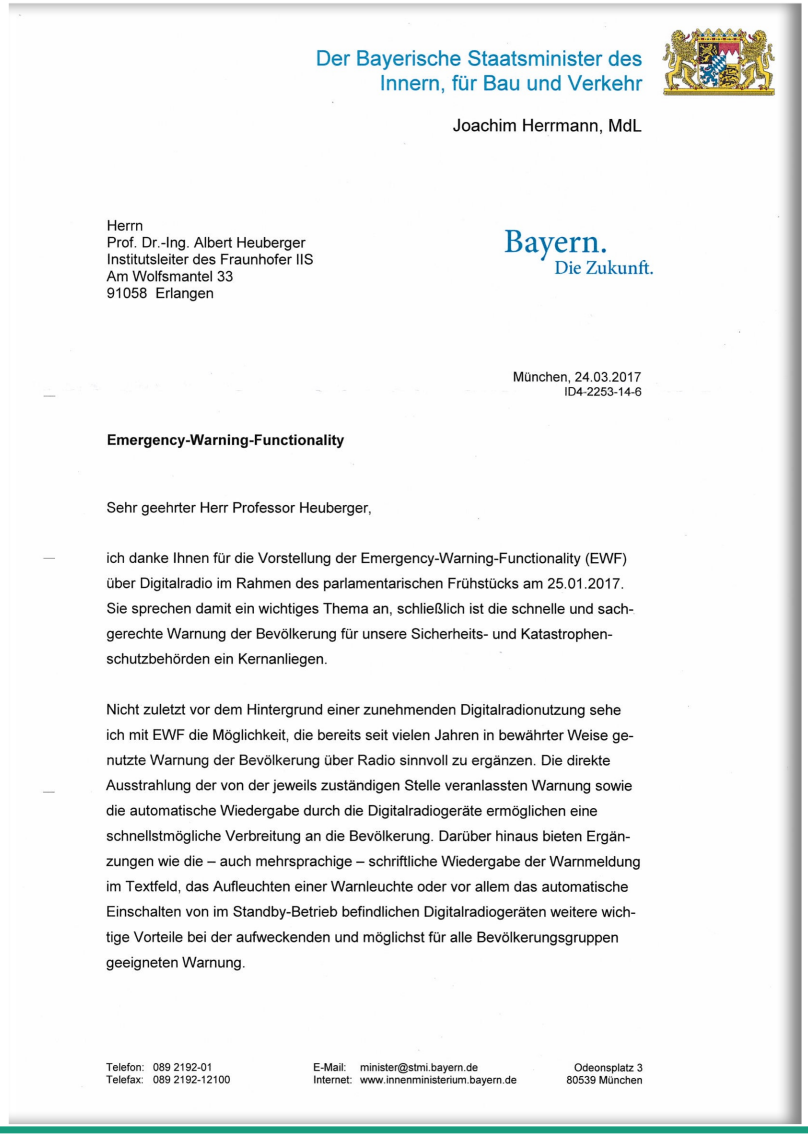
PALONA Ramses

EMERGENCY WARNING FUNCTIONALITY

Fraunhofer IIS

Emergency Warning on DAB+

EWF – current status in Bavaria



Der Bayerische Staatsminister des
Innern, für Bau und Verkehr

Joachim Herrmann, MdL

Herrn
Prof. Dr.-Ing. Albert Heuberger
Institutsleiter des Fraunhofer IIS
Am Wolfsmantel 33
91058 Erlangen

Bayern.
Die Zukunft.

München, 24.03.2017
ID4-2253-14-6

Emergency-Warning-Functionality

Sehr geehrter Herr Professor Heuberger,

ich danke Ihnen für die Vorstellung der Emergency-Warning-Functionality (EWF) über Digitalradio im Rahmen des parlamentarischen Frühstücks am 25.01.2017. Sie sprechen damit ein wichtiges Thema an, schließlich ist die schnelle und sachgerechte Warnung der Bevölkerung für unsere Sicherheits- und Katastrophenschutzbehörden ein Kernanliegen.

Nicht zuletzt vor dem Hintergrund einer zunehmenden Digitalradionutzung sehe ich mit EWF die Möglichkeit, die bereits seit vielen Jahren in bewährter Weise genutzte Warnung der Bevölkerung über Radio sinnvoll zu ergänzen. Die direkte Ausstrahlung der von der jeweils zuständigen Stelle veranlassten Warnung sowie die automatische Wiedergabe durch die Digitalradiogeräte ermöglichen eine schnellstmögliche Verbreitung an die Bevölkerung. Darüber hinaus bieten Ergänzungen wie die – auch mehrsprachige – schriftliche Wiedergabe der Warnmeldung im Textfeld, das Aufleuchten einer Warnleuchte oder vor allem das automatische Einschalten von im Standby-Betrieb befindlichen Digitalradiogeräten weitere wichtige Vorteile bei der aufweckenden und möglichst für alle Bevölkerungsgruppen geeigneten Warnung.

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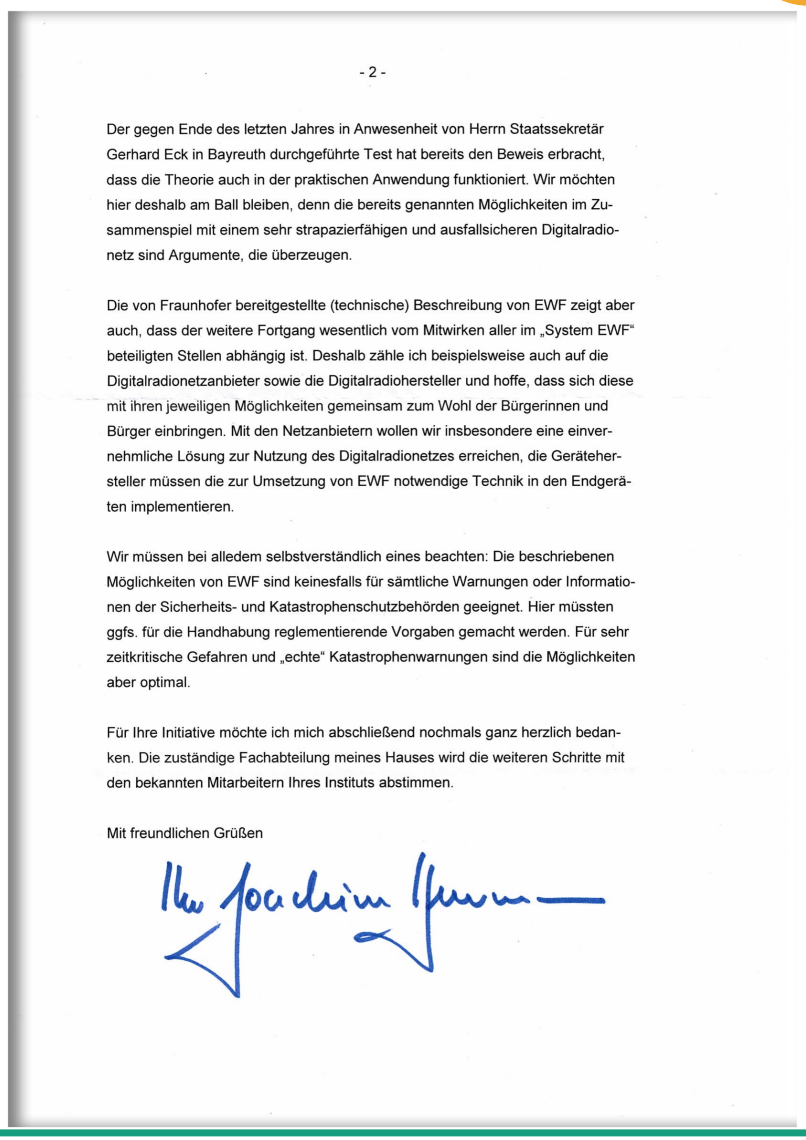

Der gegen Ende des letzten Jahres in Anwesenheit von Herrn Staatssekretär Gerhard Eck in Bayreuth durchgeführte Test hat bereits den Beweis erbracht, dass die Theorie auch in der praktischen Anwendung funktioniert. Wir möchten hier deshalb am Ball bleiben, denn die bereits genannten Möglichkeiten im Zusammenspiel mit einem sehr strapazierfähigen und ausfallsicheren Digitalradionetz sind Argumente, die überzeugen.

Die von Fraunhofer bereitgestellte (technische) Beschreibung von EWF zeigt aber auch, dass der weitere Fortgang wesentlich vom Mitwirken aller im „System EWF" beteiligten Stellen abhängig ist. Deshalb zähle ich beispielsweise auch auf die Digitalradionetzanbieter sowie die Digitalradiohersteller und hoffe, dass sich diese mit ihren jeweiligen Möglichkeiten gemeinsam zum Wohl der Bürgerinnen und Bürger einbringen. Mit den Netzanbietern wollen wir insbesondere eine einvernehmliche Lösung zur Nutzung des Digitalradionetzes erreichen, die Gerätehersteller müssen die zur Umsetzung von EWF notwendige Technik in den Endgeräten implementieren.

Wir müssen bei alledem selbstverständlich eines beachten: Die beschriebenen Möglichkeiten von EWF sind keinesfalls für sämtliche Warnungen oder Informationen der Sicherheits- und Katastrophenschutzbehörden geeignet. Hier müssten ggfs. für die Handhabung reglementierende Vorgaben gemacht werden. Für sehr zeitkritische Gefahren und „echte" Katastrophenwarnungen sind die Möglichkeiten aber optimal.

Für Ihre Initiative möchte ich mich abschließend nochmals ganz herzlich bedanken. Die zuständige Fachabteilung meines Hauses wird die weiteren Schritte mit den bekannten Mitarbeitern Ihres Instituts abstimmen.

Mit freundlichen Grüßen

Emergency Warning on DAB+

EWF – current status in Bavaria (EN translation)

Der Bayerische Staatsminister des
Innern, für Bau und Verkehr

Joachim Herrmann, **MdI**

Prof. Dr.-Ing. Albert Heuberger
Institutsleiter des Fraunhofer IIS
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91058 Erlangen

Bayern.
Die Zukunft.

Munich, March 24, 2017
104-2253-14-6

Emergency Warning Functionality

Dear Professor Heuberger,

Thank you for introducing the Emergency Warning Functionality (EWF) supported by digital radio at the Parliamentary Breakfast on January 25, 2017. It addresses an important issue as the rapid and appropriate warning of the population is of crucial importance to our security and civil protection authorities.

With the surge of digital listening, I see EWF as an opportunity to effectively supplement the long established system of warning the general public by radio in case of emergency.

The immediate broadcast of an alert message initiated by the relevant authority and the automatic presentation through digital radio sets allows for the fastest way to reach the members of the public en masse.

In addition, features such as the – also multilingual – on-screen text presentation of the warning message, warning light flash-up, or most importantly, the automatic switch-on of digital radio appliances left on standby are important advantages for a wake-up alert to reach all segments of the population.

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The test run at the end of last year in the presence of State Secretary Gerhard Eck in Bayreuth was the proof that the theory works in practice. We must continue our efforts with decisiveness as the mentioned possibilities in connection with an extremely robust and fail-safe digital radio network are convincing arguments.

The technical description of EWF provided by Fraunhofer shows that further progress depends, in essence, on the concerted action of the "System EWF" key players. I am therefore also counting on the digital radio network providers and the digital radio manufacturers and hope that they will be contributing according to their respective capabilities and responsibilities for the greater good of all citizens. With the network operators we are seeking a consensual solution for the use of digital radio networks; the manufacturers will have to implement the EWF technology in the receiver sets.

We do have to bear in mind, of course, that the described spectrum of possibilities of EWF is not suitable for all types of warning notifications or information from the security and civil protection authorities. Clear policies will have to be established as the circumstances may require. However, the EWF platform is ideal to alert in cases of impending emergencies and "real" disasters.

I would like to thank you to have commenced the initiative in this important matter. Our department in charge will be in touch with the well-known scientists of your institute to discuss further measures.

Kind regards

EMERGENCY WARNING FUNCTIONALITY

Fraunhofer IIS

Emergency Warning on DAB+
EWF – in Bavaria

- **Bavarian Ministery of Internal Affairs**
  - Positive Decision in March 2017:
    Bavaria will use EWF over Digitalradio DAB+

- **Current projekt partners in Bavaria**
  - **Fraunhofer IIS** (DAB Standard, DAB Technology)
  - **TMT GmbH**, Bayreuth (EWF Editor for emergency authorities)
  - **ILS Bayreuth** (Management Center for Emergency Cases)
  - **BDR** (commercial DAB network provider)
  - **Bavarian Ministery** of Internal Affairs

Emergency Warning on DAB+
EWF – others

- **Germany**
  - **BBK** (Bundesamt für Bevölkerungswarnung und Katastrophenhilfe) wants to use EWF nationwide
  - **Deutschlandradio** supports EWF
  - Currently **two other non bavarian regions in germany** are discussing the introduction of EWF
- **Austria**
  - EWF-Pilot in **DAB-Multiplex Vienna** (planned)
- **Slowakei**
  - EWF trial/project in 2018?
- **South Tirol (RAS)**
  - **Civil Protection Authority and RAS** have strong interest in EWF

Emergency Warning on DAB+
EWF – Standards

- EWF is **no new standard**, but …
- … a **combination of existing elements** of the DAB Standard (AlarmAnnouncement/AlarmAnnouncementOE, Audio, DynamicLabel, Journaline)
- **BMWi AG Endgeräte (Germany)**
  Discussion, Guidelines
- **WorldDAB-TC**
  Update of AlarmAnnouncement / AlarmAnnoucementOE

Emergency Warning on DAB+

DAB-EWF-Spec_v6_20160802.pdf

EWF – Emergency Warning Functionality for DAB(+)

EMERGENCY WARNING FUNCTIONALITY

1. Overview

The DAB Digital Radio platform [1] natively supports and provides all the essential tools and features for a fully integrated disaster and early warning application, allowing for an instantaneous mass-alert of DAB listeners in an affected area on standard DAB radio sets.

The task:

> Inform the **general public** (and relevant authorities) about the impending disaster,
> with **maximum reach** and as **quickly** as possible,
> giving **all relevant information.**

The EWF functionality for digital radio includes:

- Automatic service switching and potentially receiver wake-up in cases of an imminent emergency (based on alarm announcement same ensemble and alarm announcement other ensemble)
- Visual and acoustic indication of the emergency situation
- Audio announcement with the most critical highlight information
- Detailed instructions as text information in multiple languages simultaneously for interactive look-up on the receiver's screen, also allowing to address and reach hearing impaired users as well as travellers and non-native speakers

See Annex A for a list of typical use-cases addressed by EWF, and Annex B for a list of requirements from the perspective of authorities, users and network operators, and how EWF for DAB solves those requirements.

Note:
The term "**E**mergency **W**arning **F**unctionality" (EWF) was deliberately chosen to prevent confusion with specific application definitions often referred to under the general expression "EWS" (Emergency Warning Systems or Services). In particular, "EWF" as a best-practice description of how to apply standard elements of the DAB tool box must not be confused with the "EWS"

EMERGENCY WARNING ON DAB+

EWF – EMERGENCY WARNING FUNCTIONALITY

2nd June 2017

Fraunhofer
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