

## **GUIDELINES FOR ALIASES AND PHONEMES**

**A how to guide for broadcasters and manufacturers, April 2024**

# Aliases and Phonemes - essential for voice support

- There is increasing use by listeners using voice commands to **navigate radio stations**, particularly as the list of stations is becoming much longer
- Smart speakers and virtual assistants use **voice recognition** and **voice reproduction**
- **Voice recognition** - to understand what is said to them
- **Voice reproduction** - to confirm choices and results to users in natural language
- Many typical words and phrases can be represented by plain text
- But two situations are not well handled
- When listeners often call a radio station by something other than its **exact official name**
- When a radio station name isn't said the same way as it's written down in text
- **Aliases** and **Phonemes** help listeners find radio stations

# Aliases and Phonemes - an explanation

- **Aliases** are alternative ways of describing a radio station
  - The official station name is "XYZ Radio One", but listeners often call it "One FM"
  - Adding "One FM" as an alias means the station will also be recognised as "One FM", but that will never be shown or said to a listener.
- **Phonemes** are the detailed building blocks of speech. All sounds can be represented using phonemes
  - The official station name is "ZZZ100" - but it's said "Triple Zee One Hundred"
  - This is accurately written as "ˈtrɪpl zɪ: wʌn ˈhʌndrəd"

# Implementation guides

1. For broadcasters
2. For manufacturers



## **BROADCASTER IMPLEMENTATION GUIDELINES**

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# Check your station name

- Check how your station name is reproduced by tools like Google Cloud Text-to-Speech when using just text names
  - <https://cloud.google.com/text-to-speech>
- Check how existing speech recognition tools recognise your station name
  - e.g. Google Assistant, Siri, Amazon Alexa
- If it's accurately spoken and recognised when using the text names, then you don't need **phonemes**

# Text Names

- All radio stations must provide their official name in text form:
  - shortName - up to 8 characters
  - mediumName - up to 16 characters
  - longName - up to 128 characters
- You should make sure you use all these fields to describe your station name.
- You can omit the longName if it would be identical to mediumName.

# Check alternative (alias) names

- Do listeners or presenters refer to your radio station using names other than the official name?
- Are you listeners multi-lingual and use different names in different languages?
- Check those alternative names for reproduction and recognition.
- If listeners and presenters never use any variations on the name, you don't need **aliases**

# Create Aliases

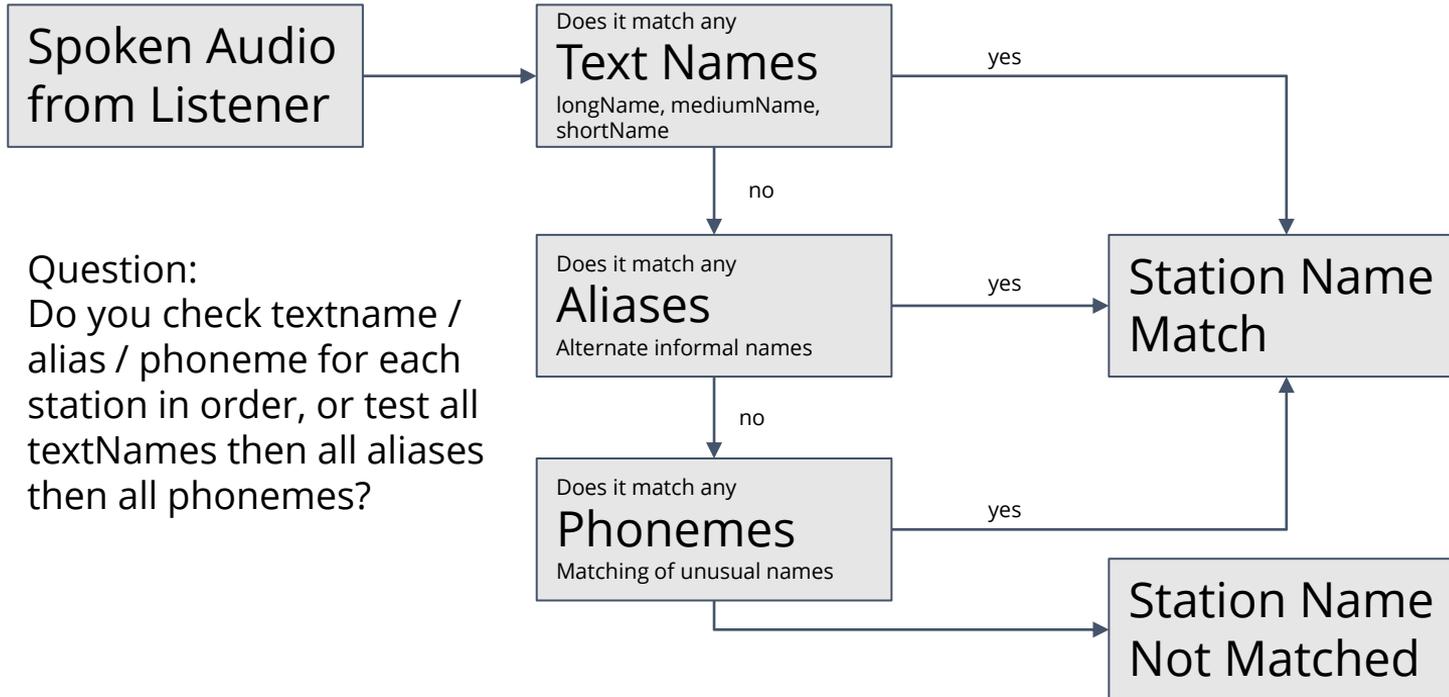
- As aliases are **never** shown to listeners
- Can your alias name(s) be accurately described using simple text?
  - e.g. "1FM" becomes "one eff emm"
  - "Bayern 1 Obb" or "Bayern 1 Oberbayern"
  - "SWr 1 kn" for "Deutschlandfunk" or "DLF"
- Add those simple text definitions to your **aliases** list

# Create Phonemes

- You should add phonemes for any station name that can't be accurately recognised or reproduced using simple text
- Use a text to phoneme convertor to help you
  - e.g. <https://tophonetics.com/>
- The recommended "Alphabet" for phonemes is IPA
- You need to make phoneme definitions for each language and dialect your listeners use

# Hierarchy of matching

- The information from your station is tested in **order** according to this hierarchy



Question:  
Do you check textname /  
alias / phoneme for each  
station in order, or test all  
textNames then all aliases  
then all phonemes?

# Problems or questions

- Contact WorldDAB or RadioDNS
  - [metadata@worlddab.org](mailto:metadata@worlddab.org)
  - [metadata@radiodns.org](mailto:metadata@radiodns.org)
- TS 102 818 v3.4.1 and TS 102 371 v4.1.1 have the detailed specifications
- The RadioDNS SI tool allows you to experiment adding aliases and phonemes to your existing data
  - <https://si.radiodns.org>



## MANUFACTURER IMPLEMENTATION GUIDELINES

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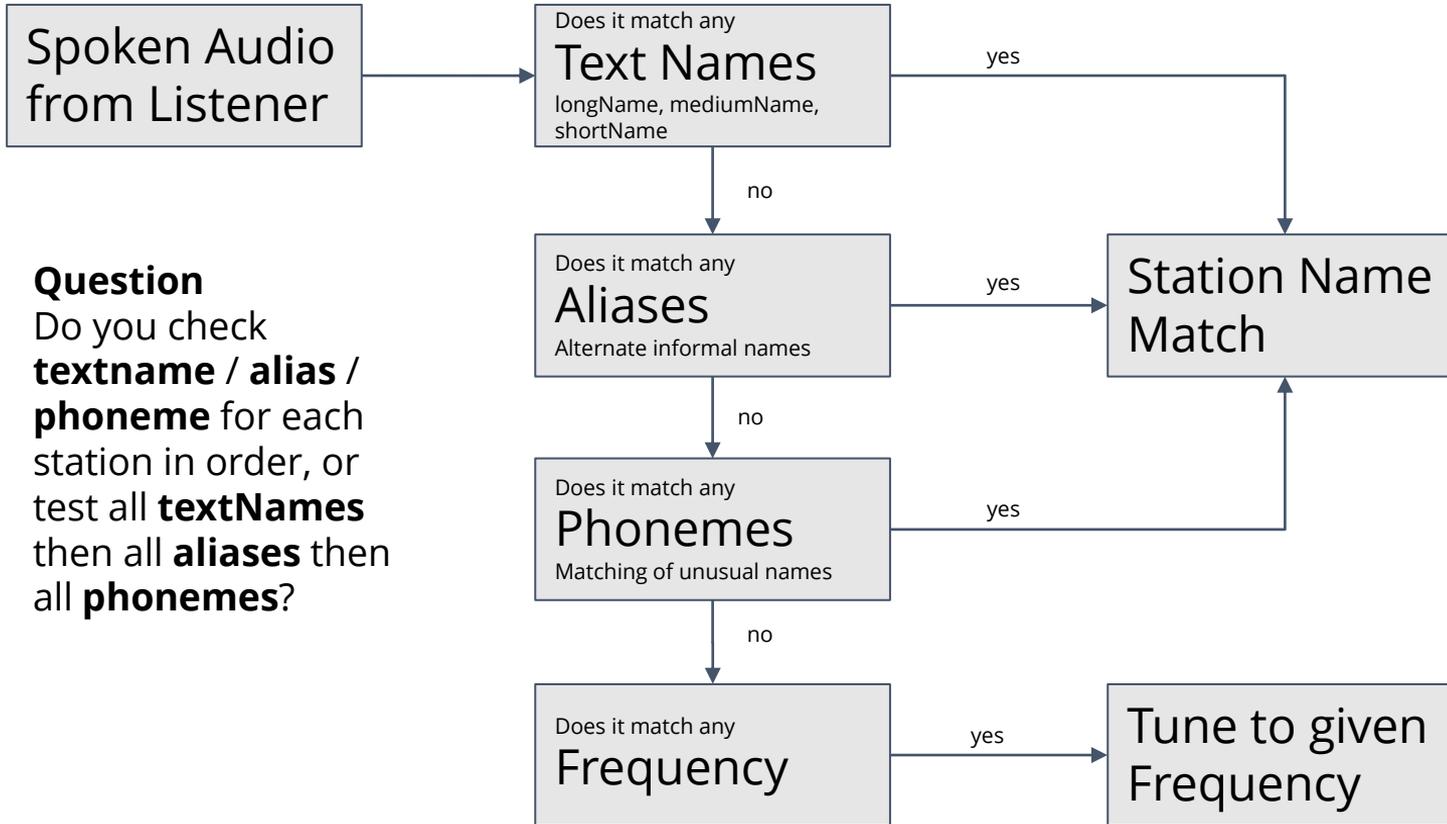
# Extent of implementation

- Many radio station and programme names can be accurately described using existing text elements (e.g. shortName, mediumName, longName)
- Broadcasters will implement **aliases** and **phonemes** only where it is necessary, not universally
- IPA is the recommended alphabet for phonemes
- The Technical Details are contained with TS 102 818 v3.4.1

# Building the service list of available stations

- Scan frequencies / multiplexes for services
- Carry out RadioDNS lookup to get SI file(s)
- Assemble list of available services, with their associated Text Names, Aliases, Phonemes (and frequencies for analogue radio)
- Use this list to search for the service the listener is asking for

# Hierarchy of matching



## Question

Do you check **textname** / **alias** / **phoneme** for each station in order, or test all **textNames** then all **aliases** then all **phonemes**?

# Implementation assumptions

- The voice recognition engine will be adapted to work with local accents / dialects based on the user's chosen language
- **Alias** names will never be shown on spoken to the user - they are only hints for informal names for the station
- **QUESTION**  
How to handle specific frequency requests if that matches a station name? Should it match on station name first, or tune directly to the given frequency first. If the listener says a recognisable frequency (e.g. "ninety-seven point three"), should the radio should tune to that **frequency** or to the station name "97.3"
- Disambiguation query to the end user?

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- TS 102 818 v3.4.1 and TS 102 371 v4.1.1 have the detailed specifications
- The RadioDNS SI tool allows you to experiment creating dummy SI and PI files with aliases and phonemes
  - <https://si.radiodns.org>



world **dab**

[worlddab.org](http://worlddab.org)