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## Conversational News Interaction Using Indexing and Linking

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## **Conversational News Interaction Using Indexing and Linking**

### **ABSTRACT**

This disclosure describes techniques that enable conversational news interaction. Per the techniques, a virtual assistant application that is configured to access the latest news, provides summaries of news items to a user on demand in a hands-free or screen-free manner. The user can skim through the recited summaries, and if a news item of interest is found, access greater detail by engaging in a conversation with the virtual assistant, e.g., by asking questions.

### **KEYWORDS**

- Interactive news
- Conversational news interaction
- News summarization
- News bulletin
- Virtual assistant
- Smart speaker
- Speech recognition
- Smart speaker

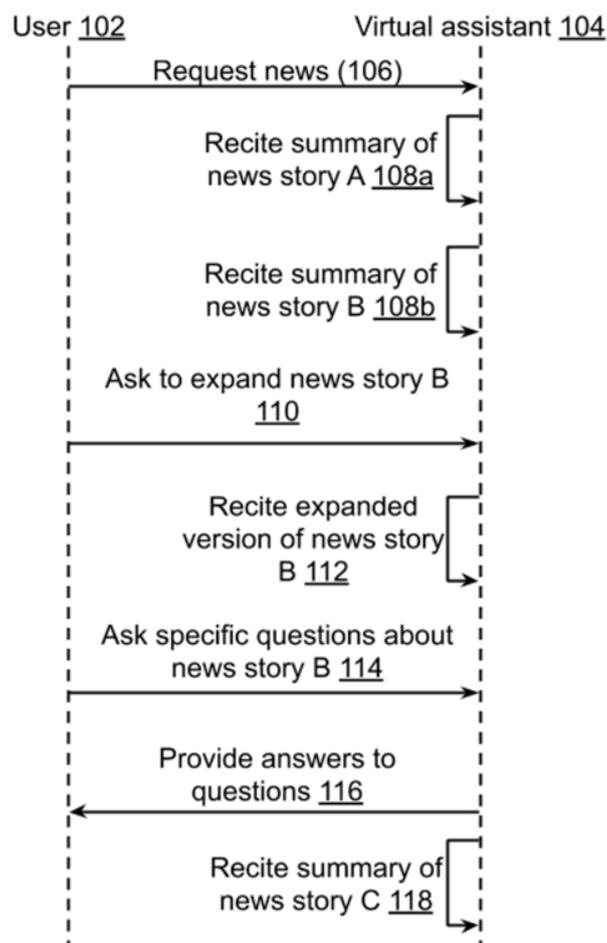
### **BACKGROUND**

Users seek timely access to the latest news. This often means on-the-go access to the freshest news content. It can also mean that users often get a brief summary of each happening story, for example, via news bulletins, news-briefs from broadcasters, news flashes from publishers, etc. At the same time, if a news topic is of interest, users seek to be able to easily access further details. Moreover, users seek to access underlying details in a possibly hands-free,

screen-free manner. Such access can be provided via a smart speaker, in-car speaker, or other devices.

## DESCRIPTION

This disclosure describes techniques to deliver interactive news bulletins that are interruptible at any point by the user with a conversational interaction. The user can engage in conversational interaction to request details on a specific topic of interest.



**Fig. 1: Conversational news interaction using indexing and linking**

Fig. 1 illustrates conversational news interaction using indexing and linking, per techniques of this disclosure. Upon a request (106) by a user (102), a virtual assistant (104)

recites summaries of news stories (108a, 108b). The user requests the virtual assistant to expand a particular news story of interest (110). The virtual assistant responds to the user request by reciting a more detailed version of the news story of interest (112).

To respond to user requests for detailed and summary versions of news stories, the virtual assistant (e.g., via a backend server) is configured to search for detailed articles and briefs pertaining to current news topics, e.g., as produced by diverse broadcasters and publishers, and to collate, organize and index such articles to achieve seamless linking between audio, video, print, and other mediums.

The user further pursues their understanding of the news story of interest by asking specific questions about the news story (114). The virtual assistant provides answers to the user's questions (116). Once the user is finished with a topic, the virtual assistant continues with summaries of other news stories (118) or follows other instructions issued by the user.

To collate, organize, index, and link news produced by diverse broadcasters and publishers in various mediums such as audio, print, video, etc., the techniques integrate the following components:

- **Automatic speech recognition (ASR) engine:** The ASR engine transcribes audio or video news bulletins broadcasted or podcasted by news organizations, and also understands and indexes the resulting transcription.
- **Document creator:** The document creator creates documents from ASR transcriptions and adds the documents to an indexed document repository.
- **Cross-ranker:** The cross-ranker cross ranks content from the websites of publishers to connect topics in a given news-bulletin to documents published by the provider on their site. This enables the retrieval of more detailed content from that publisher during user

interactions, e.g., to user questions such as “tell me more about the upcoming British election.”

- **Topics Linker:** The topics linker connects topics in a given news bulletin to content from other trustworthy publishers on the same topic. This enables responses to user queries of the form “what does publisher X have to say about this topic?”
- **Dialog framer:** The dialog framer creates dialog frames within conversational interaction to enable users to interrupt a virtual assistant while listening to a news bulletin, e.g., to ask for more details.

Alternatively, publisher or provider-specific interactive news can be created by deep linking broadcast and published content from that provider.

In this manner, the described techniques enable seamless access to indexed and linked news information in various environments and form factors, e.g., screenless and conversational environments such as smart speakers, speakers in automobiles, multimodal environments that provide both visual and auditory channels, etc.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user’s social network, social actions or activities, profession, a user’s preferences, or a user’s current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user’s identity may be treated so that no personally identifiable information can be determined for the user, or a user’s geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of

a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

## CONCLUSION

This disclosure describes techniques that enable conversational news interaction. Per the techniques, a virtual assistant application that is configured to access the latest news, provides summaries of news items to a user on demand in a hands-free or screen-free manner. The user can skim through the recited summaries, and if a news item of interest is found, access greater detail by engaging in a conversation with the virtual assistant, e.g., by asking questions.

## REFERENCES

[1] “BBC reinvents news for smart speakers with UK's first interactive voice news service”, <https://www.bbc.co.uk/mediacentre/latestnews/2019/interactive-voice-news-service> accessed Jan. 13, 2020.