Technical Disclosure Commons

Defensive Publications Series

December 07, 2017

Proximity-based single-tap meeting room selection

Xavier Lepaul

Josefin Karlsson

Carolina Sartorius

Megan Boundey

Alex Usbergo

Proximity-based single-tap meeting room selection

ABSTRACT

A meeting participant can join a scheduled or ad-hoc meeting from a conference room by manual entry of a meeting code into meeting room audio or video conferencing equipment. This is a tiresome and error-prone process that requires multiple steps. This disclosure describes techniques that enables users to join a meeting at a nearby conference room using a simple user interface. With user permission, a mobile device of the user determines user proximity to a conference rooms based on signals transmitted by conference rooms. The identity of the available conference room(s) is used to generate and present a user interface that includes a split action button that enables the user to join the meeting from a selected conference room.

KEYWORDS

- conference call
- video conferencing
- conference room
- proximity sensing
- beacon

BACKGROUND

A meeting participant can join a scheduled or ad-hoc meeting from a conference room by manual entry of a meeting code into meeting room audio or video conferencing equipment. This is a tiresome and error-prone process that requires multiple steps. For example, participants sometimes find it difficult to enter meeting codes or other meeting information.

DESCRIPTION

A conference room can be configured to broadcast its identity using short-range wireless signals, e.g., BLE^{TM} (Bluetooth low energy), ultrasound beacons, etc. Mobile devices can utilize such signals to determine a current location within a building. Moreover, mobile devices are usually configured with access to a schedule of meetings for the device owner. This disclosure leverages the availability of device location (e.g., proximate a conference room) and user context, with user permission, to selectively and automatically activate video-conferencing equipment in a conference room to join a meeting. The described techniques are seamless and require little or no user interaction.

Per techniques of this disclosure, a user interface is provided to enable participants to join a meeting from a conference room with a single tap. The techniques leverage Bluetooth low energy or ultrasound beacons that are configured to transmit signals. The identity of nearby conference room(s) and the distance from a current location of the participant is automatically determined based on these signals, upon specific user permission to determine the current location. When a nearby conference room is identified as being available, the user interface enables the participant to activate the equipment in the conference room to join a meeting. If multiple nearby rooms are identified as being available, the user interface includes a split-button, drop-down menu that enables the participant to select one of the rooms, e.g., using a short sequence of taps.

The meeting can be a scheduled meeting or an ad-hoc meeting. Participants can pre-book a conference room for the meeting, or select a room that’s available at the time of the meeting. If it is determined that no nearby room is available, the user interface provides a default selection to enable joining the meeting from the participant’s mobile device.

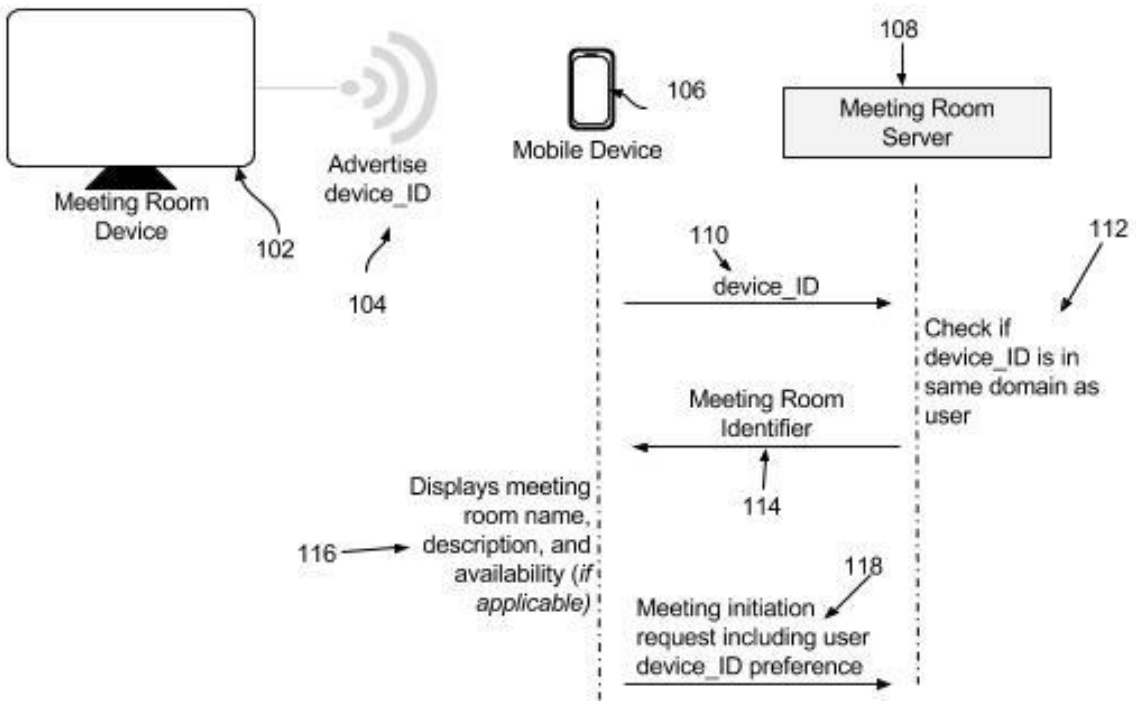

Fig. 1: Proximity-based conference room selection

Fig. 1 illustrates an example scenario illustrating proximity-based conference room selection. A conference room that includes a meeting room device (102), e.g., audio/video conferencing equipment, advertises its identity (104) using a short-range wireless beacon, e.g., BLE^{TM}, ultrasound, etc. A participant mobile device (106) receives the signal and provides the conference room identity information, e.g., device_ID (110) of the meeting room device to a meeting room server (108). The meeting room server determines if the conference room is enrolled in a domain (112) of the user of the mobile device.

Upon determining that the conference room is enrolled in the domain, the meeting room server transmits a meeting room identifier (114) to the mobile device. The mobile device displays a user interface the meeting room name, description, and availability (if applicable) (116) to the user and enables the user to select a particular meeting room. In response to the user selection, the mobile device sends a meeting initiation request (118) to the meeting room server.

The meeting initiation request includes the user's indicated preference for conference room. The meeting room server activates the meeting requested by the user in the conference room requested by the user.

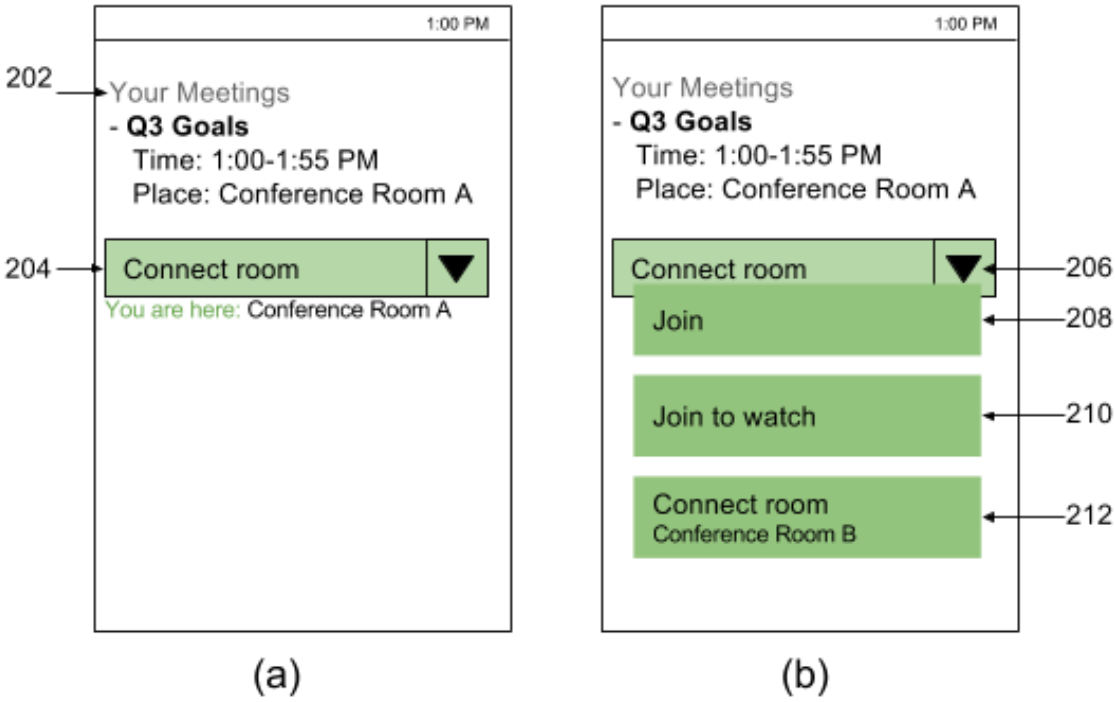

Fig. 2: User interface to join a meeting at a nearby conference room

Fig. 2 illustrates an example user interface of a mobile software application that displays upfront an anticipated user preference and enables one-step selection of a conference room. Referring to Fig. 2(a), the user interface displays the user's meeting (202), which includes, e.g., title, time, a pre-booked conference room if any, etc. A split-button (204) offers conference room options for the user. The most likely action for a user in their current environment, e.g., join the meeting from the nearest conference room, is provided as the default, and identified with the label and action of the button. A smaller, split part of the button (206) can be activated to provide a drop-down that lets the user select from other options to join the meeting. For example, if the

user is near the originally booked conference room, the split-button enables connecting that room to the meeting with a single tap.

Fig. 2(b) illustrates a scenario when the user is away from the originally selected conference room. In this example, the user is detected as being closer to a different conference room ("Room B"). When tapped, the split-button reveals a drop-down menu that enables the user to select from alternatives to join the meeting, e.g., from the nearby conference room B (212), from the mobile device itself (208), or join the meeting as an observer, e.g., to watch (210) without interaction, etc.

The described techniques enable users to join a meeting from a convenient nearby conference room, including but not necessarily the one originally booked, without having to manually provision conference room equipment for their specific meeting.

The user interface is implemented such that the most likely expected user action is presented as the default choice, e.g., as the label and action of split-button. For example, if the user is not near any conference room, the split-button option defaults to joining the meeting over the mobile device, which is determined as the most likely expected user action in such a scenario. If the user location is determined to be near multiple conference rooms, the split-button menu shows the multiple available conference rooms, e.g., listed in an order of proximity. If the user location is determined as inside a particular meeting room, the button action defaults to connecting that room to the meeting, regardless of whether or not the room is pre-booked for the meeting. In this instance, the detection of the user location as within the room is an indication that the user wishes to connect the room to the meeting, and therefore, the room is displayed as the default action.

By prioritizing the default option in this manner, the technique described herein enable the user to join a meeting with minimal interaction. The techniques are extensible, providing for more default actions to be added based on the determined user context, both within the app and based on physical location.

While the foregoing discussion describes a split button, the user interface can display multiple available options as separate user interface elements that each correspond to a particular option to join the meeting. Alternatively, a single default action can be included in the user interface, with other options accessible in sub-menus or other parts of the user interface.

The techniques of this disclosure can be used in any scenario where proximity sensing is used to determine default actions. For example, the techniques can be used within a store to present different default actions based on whether the customer is close to certain aisles or shelves.

The described techniques utilize beacon signals and determine user proximity to a conference room upon specific user permission. If the user declines permission, proximity is not determined, and the split action user interface is not presented.

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 enables users to join a meeting at a nearby conference room using a simple user interface. With user permission, a mobile device of the user determines user proximity to a conference rooms based on signals transmitted by conference rooms. The identity of the available conference room(s) is used to generate and present a user interface that enables the user to join the meeting from a selected conference room.