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Issues and Requirements in Floor Control

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Abstract

This documents lists issues and requierements for floor control in conferencing applications. It is meant in addition to the existing requirements draft "raft-koskelainen". It basically proposes to do floor control in a policy less way. Meaning that the policies are built into the floor dcontrol server, but not part of the protocol.

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1. Introduction

Floor control is a mechanism used to deal with concurrency in distributed systems. So it basically deals with the question who is allowed to generate input or change/write to a resource.

In the context of conferencing systems floor control has two different goals. First it is about who is allowed to "speak" by sending data input into the conference, so has to do with access control. Second, there are some applications which also require the ordering of input in order to work correctly (single input/sequential input applications). In the later case floor control can help to create correctly functioning applications.

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2. Terminology

floor

- the right to generate some input.

floor control - determines at any given point in time, which entity is allowed to provide input, where entity could mean a user or an automated application.

floor holder -

user currently allowed to provide input.

floor control mechanisms - the low-level protocol handling the floor control.

floor control policy -

the rules for a certain operation of floor control.

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3. Issues

3.1 Scope of the floor

The floor can be assigned to various entities. E.g., a floor for a single session, an application, a conference. We assume an application can have several session, and a conference can have several applications. The floor can be bound to any of these entities. There is naturally a dependency on what application the floor control mechanisms is used for.

3.2 Number of users concurrently holding the floor

It is possible that several users concurrently hold the floor. For example, in the case of audio input to the conference, it is then mixed together. Other applications such as shared workspaces/ application sharing might have a problem with concurrent input.

3.3 Floor Control Policies

Floor control policies define the way how the floor is passed around. Here are some examples of floor passing:

- ring passing: the current floor holder must explicitly release the floor before anyone else can acquire it.
- Preemptive: any user can grab the floor at any time
- Timeouts: a user loses the floor after a period of inactivity or after a given time holding it.
- Moderated: a designated user has control over passing the

floor.

- IETF meetings: mostly moderated with queueing of floor requests.

3.4 Explicite versus implicite floor passing

Explicite floor passing requires an explicit action of a user passing the floor.

Implicit floor passing automatically gives the floor to a user as soon as he generates input. Implicit floor passing together with a preemptive policy corresponds actually to the case of having no floor control at all. For conversations this means also that a social protocol and etiquette is needed.

Implicit floor passing is much easier from users point of view, since no explicit action is required. Since the floor might be passed implicitly there need to be a group of users eligible to get the floor, where others might not get the floor implicitly. In the IETF

meeting example, the floor can implicitly pass between all the people having a microphone, where others waiting in the queue are not eligible for getting the floor implicitly.

3.5 Floor passing

trigger

In implicit floor passing there needs to be a trigger to pass the floor automatically. Specifically in multi-application/session conference the trigger can be chosen freely. E.g., the person start speaking also get the floor for the shared whiteboard etc.

3.6 Activity

awareness

In conferencing scenarios users normally want to be aware what is going on. So for example they might want to know who currently has the floor etc.

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4. Requirements

MUST allow for various scopes

MUST have single and concurrent floor holders

MUST be independent of a particular floor control policy.
The

policy should be part of a particular implementation, not of the mechanisms itself.

MUST be able to restrict the group of users eligible for implicit floor passing.

MUST provide means for distributed floor information (e.g., current floor holder to other participants

SHOULD allow for transporting trigger filter information. What triggers the implicit floor control change

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