BBB Meeting in [matrix] Element

realisation variants

Content

- Variant 01
  - Integration via /addwidget
  - PoC available

- Variant 02
  - Integration via button / as widget in the chat room

Variant 01

- BigBlueButton (BBB) video conference is integrated via /addwidget as an extension in the chat room [matrix], Element client

- PoC BBB-matrix-widget service available at:
  https://greenlight-dev.fairteaching.net/bbb-matrix-widget/webapp/
  - to be clarified / implemented: Authentication
  - Repo PoC: https://git.fairkom.net/hosting/fairmatrix/matrix-conf-ext
  - Microservice: https://git.fairkom.net/hosting/fairmatrix/matrix-conf-ext-svc

/addwidget

- /addwidget
  https://greenlight-dev.fairteaching.net/bbb-matrix-widget/webapp/

- [matrix], Element client: the command must be entered by the room admin in the chat bar and executed by pressing Enter

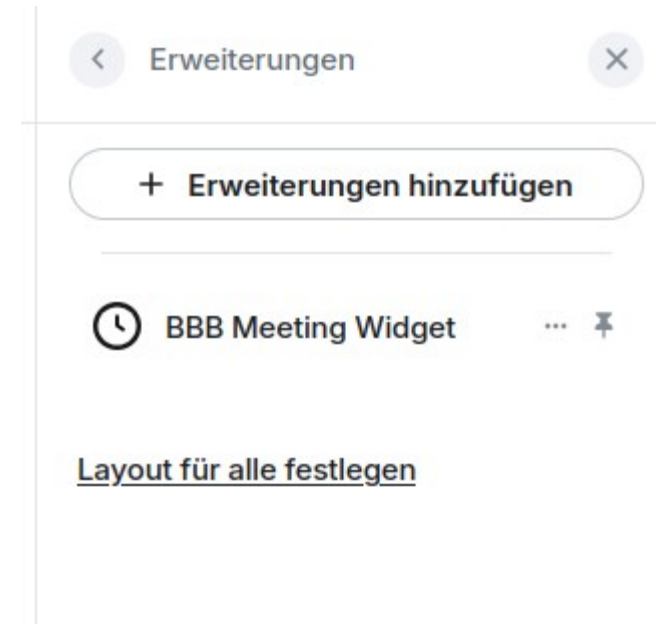11:17 Lisa hat das Widget Custom hinzugefügt

/addwidget https://greenlight-dev.fairteaching.net/bbb-matrix-widget/webapp/

Authorise rights

- the room admin must authorise the rights for the widget
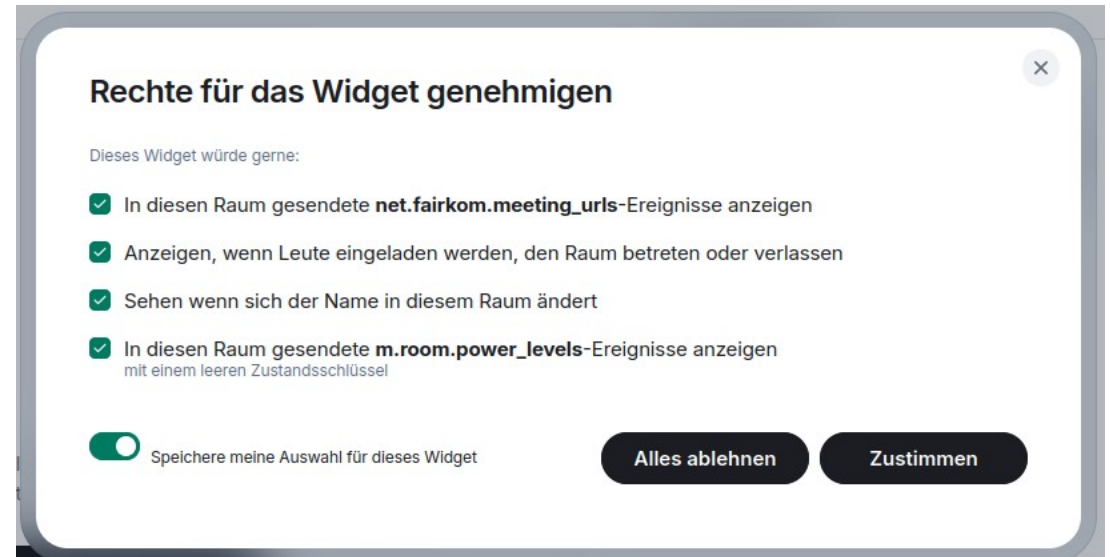
Extension

- Room info > Extensions

- the BBB Meeting Widget will then be visible to all participants

Consent

- all participants must give their consent to use the widget

- until now, consent has been required each time the widget is launched

Create video conference room

- the room admin can create a video conference room (Create Room)

- the rights must be authorised again
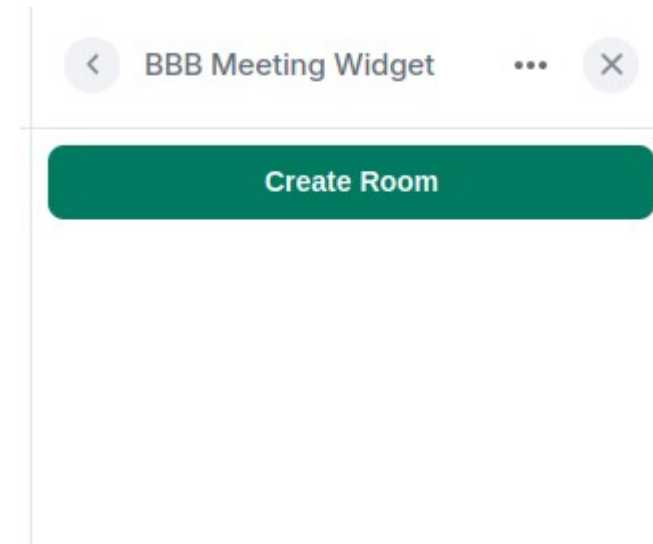
Enter the video conference room

- participants can join the video conference room (Join Meeting)

- an individual link is created for each participant

- the roles of the participants are transferred from [matrix] to BBB

- to be clarified: generic link for participants outside [matrix]
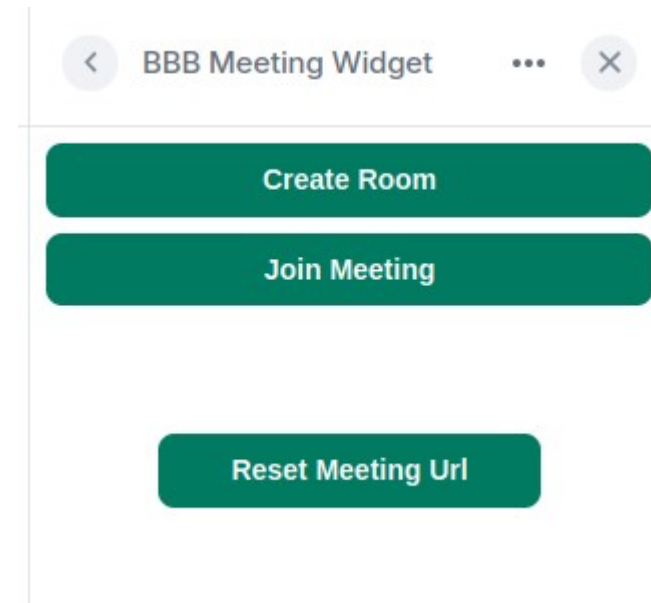
New tab

- the BBB conference opens in a new tab

- Username is transferred

- a tab: [matrix] Element client

- a tab: video conference BBB
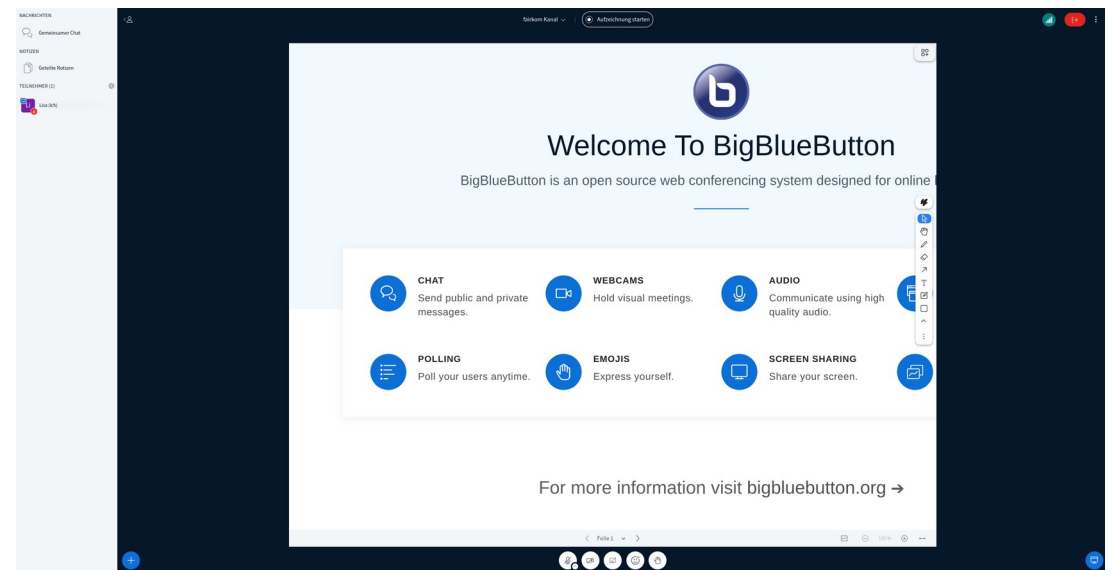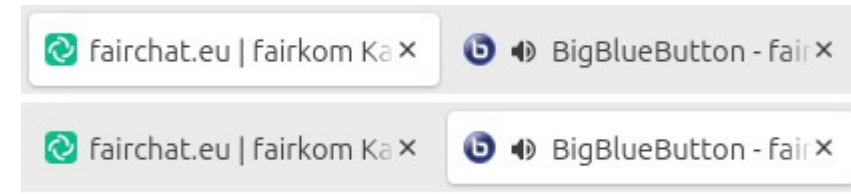
Overview 01

Advantage

- Variant immediately available / usable

- BBB conference can be easily added to them room, participants can join

- name and authorisation are transferred

Disadvantage

- Consent of all participants required

- display in new tab, can also offer advantages for usability

- Element chat ≠ BBB chat

Variant 02

- BigBlueButton (BBB) video conference can be started via button in the chat room [matrix], Element client

- BBB conference opens as a widget within the chat room

- Notes implementation (matrix-js-sdk):
  https://github.com/toger5/matrix-js-sdk/commit/b261a3f9324afa6547423ebd38912086ad1b0c3e

- matrix-spec-proposal:
  https://github.com/matrix-org/matrix-spec-proposals/blob/toger5/matrixRTC/proposals/4143-matrix-rtc.md

Procedure

What is required?

- Problem: one room > one RTC session (type call)

- Multiple RTC sessions (of different types) must be supported per room (js-sdk matrixRTCSessionManager.ts)

  - video conference and whiteboard session in parallel

How can this be achieved?

- update rust- and js-sdk-implementation

- adapt to the format of the state key from the specification (user_device_app) (not: user_device)

- adapt livekit / room identity

state key format

- from the spec m.rtc.member state event

- at the moment: user_device

- needs to be: user_device_app

  - map rooms to application > rtc sessions

  - user id

  - device id

  - application

- longterm: user id + hash

Decision

- BBB of type org.bigbluebutton.call

  - we start with it

  - parallel call and BigBlueButton sessions are possible

  - BigBlueButton does not need to add encryption

- BBB of type m.call

  - possible step in the future

  - Interoperability with ec (Element client?)

Flow design

Element Web needs to support recognising and displaying different RTC sessions and provide a way to join them.

Question(s) for the future:

- What will the creation / participation in Element Web look like?
- How will it be indicated that two sessions are running in parallel?
- Example: Video call button + dropdown for further widgets (whiteboard)

- Focus on easy maintainability (general approach)

- Element Web should support RTC sessions in a smart way (without many custom rules)

Where is it stored which widget must be used for which type of RTC session?

Idea 1

- in the widget metadata: the widget informs the client in its state event that RTC sessions of application type X can be processed

- if a session of type X takes place, the client automatically opens the correct widget

- Problem: only one widget can be used per session type (it is not possible to use two whiteboards simultaneously)

- Advantage: no need to change the membership state events, no conflict can arise

Idea 2

- the member events that make up the RTC session (state events per session) refer to which widget can be used to open the session

- Problem: different members could request different widgets but be in the same RTC session

- Solution: the widget ID could be part (equivalent) of the call_id
  - specify this as part of the session identity
  - if a different widget_id is used, a member ends up in a different real-time session

Overview 02

Advantage

- BBB as video conference directly in [matrix], Element client implemented

- several widgets (video conference + whiteboard) can be used in parallel in a chat room

- easy to maintain

Disadvantage

- Preparatory work required to be able to select widgets

- Resources of several teams required

- compatibility issues due to data structure change