

Bachelorarbeit Abschlussvortrag

**Improved Communication through VoIP / Chat  
for a distributed pair programming tool (Saros)**

Olaf Loga

Institut für Informatik

FU Berlin

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- Saros
- Content of the written Bachelor thesis
- Implementation
- Usage
- Result
- Outlook

- Open Source Eclipse Plugin
- Supports *Distributed Pair Programming (DPP)*  
*One Writer – One Observer (Follow Mode)*
- Supports *Distributed Party Programming*  
*Many Writers – Many Observers*
- No communication possibilities in Saros so far

- Introduction to Pair Programming
- Overview of Saros
- Introduction to XMPP (Extensible Messaging and Presence Protocol)
- Chat functionality (Multi User Chat - MUC)
  - What is already done?
  - Where are the problems?
  - How does XMPP MUC work?
- VoIP functionality
  - Choice of the Audio Encoder
  - Using XMPP Jingle Extension or StreamService?

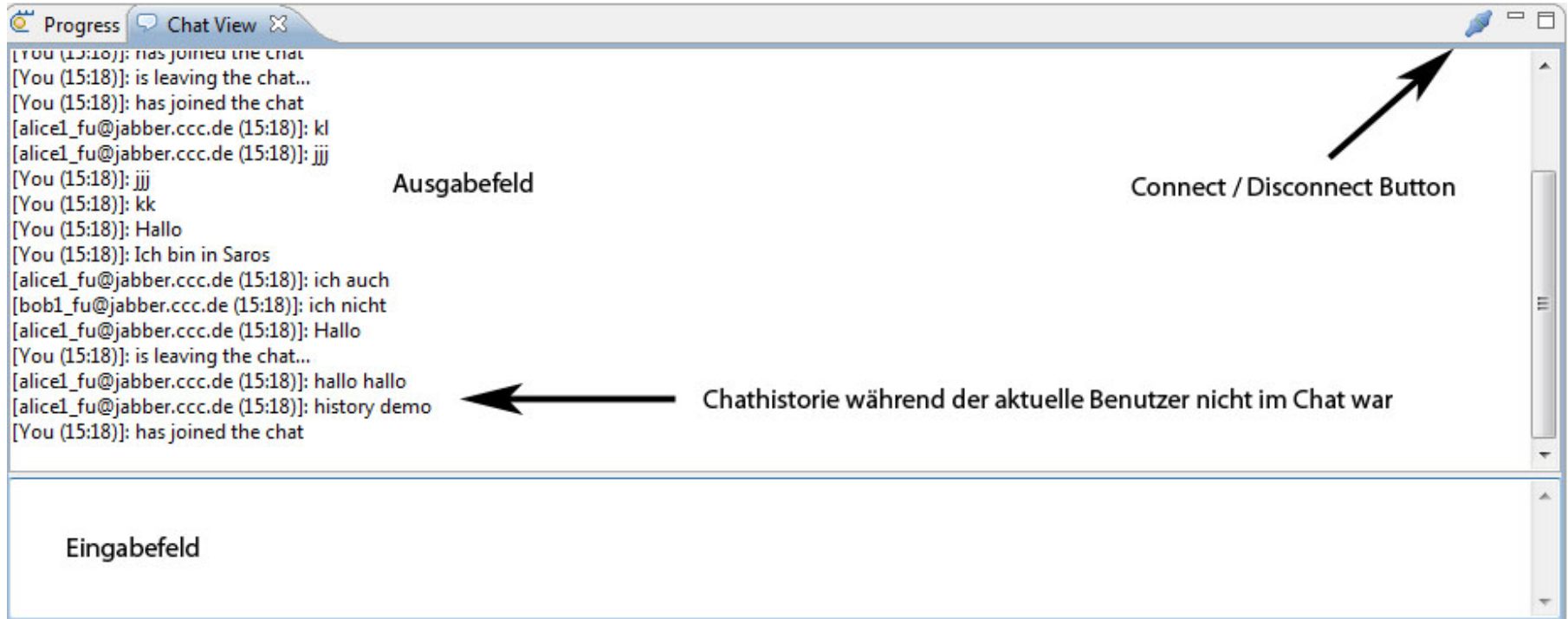
# Implementation (Chat)

- Problem: One Chatroom for all Saros users
- Chat uses XMPP MUC extension
- Now: One Chatroom for each Saros session
- Possibility to join the chatroom with an external XMPP Client (e.g. SIP Communicator)
- Chatroom name and chatroom password can be set by session host

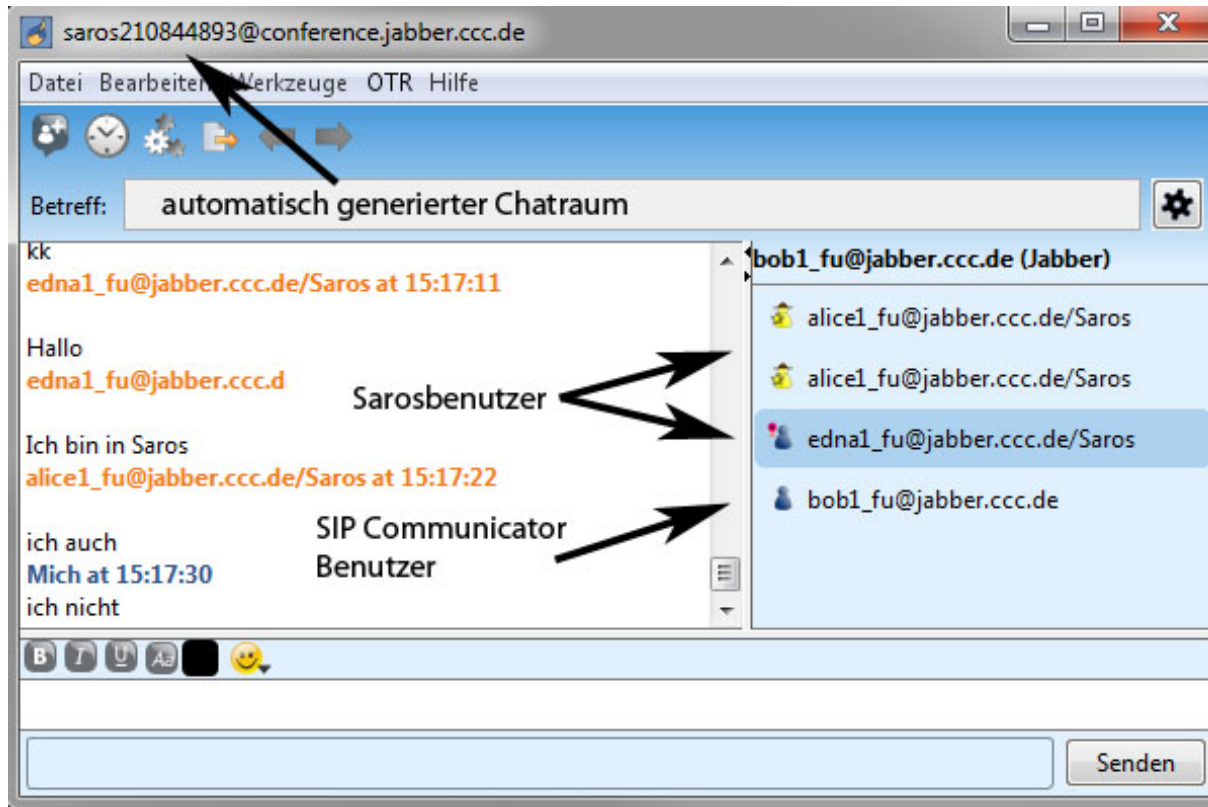
# Implementation (VoIP)

- VoIP function uses Speex (jSpeex API) as Audio De-/Encoder
- Uses StreamService by Stephan Lau (ThesisDPPXIII)
- Only classic telephone call (2 persons) – no group call supported at the moment
- Many VoIP sessions per Saros session
- Users can adjust encoder settings (e.g. quality, playback device, record device, etc.)

# Usage (Chat)

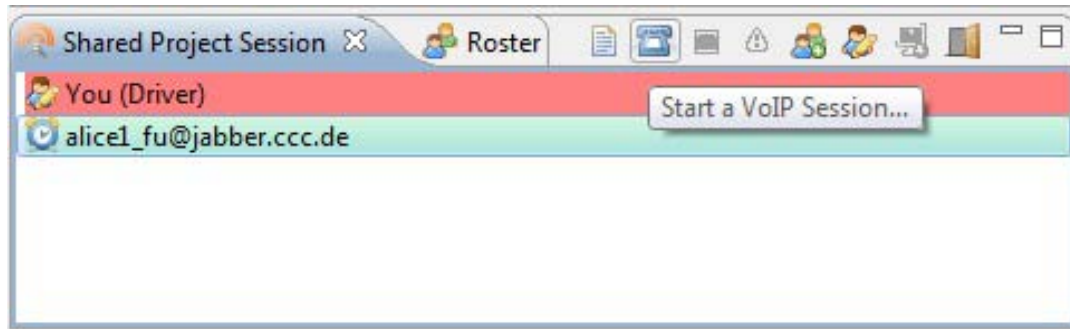


# Usage (Chat)

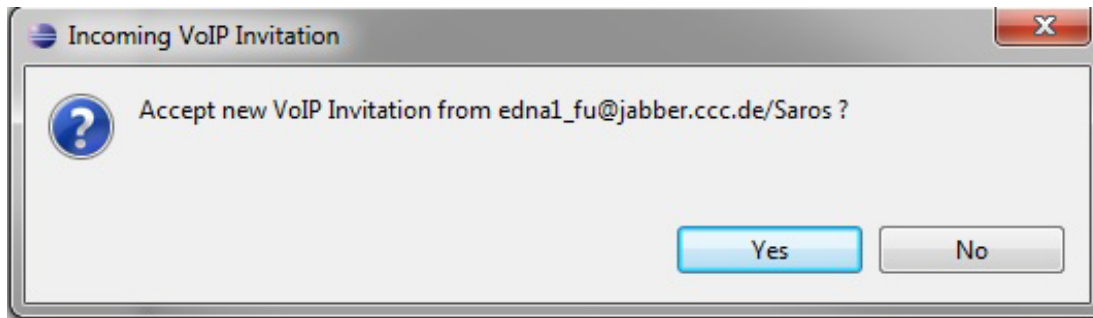




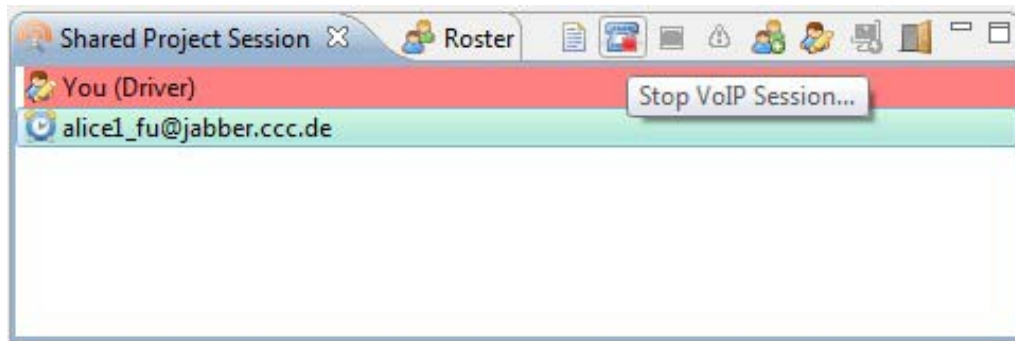
## Starting a new VoIP Session



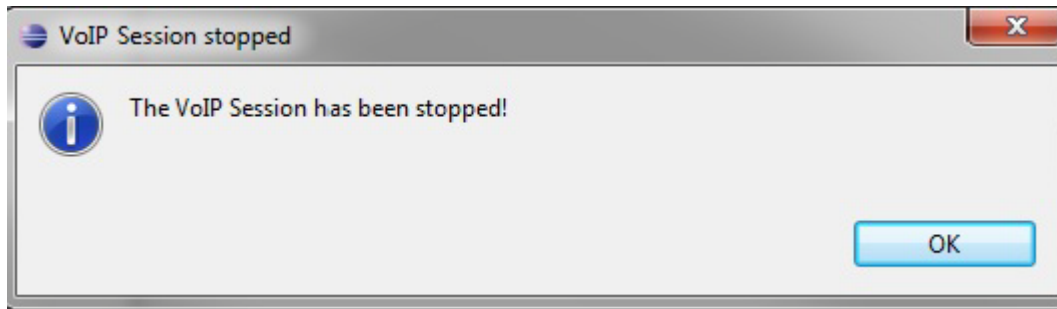
## Invitation Dialog



## Stopping a VoIP Session

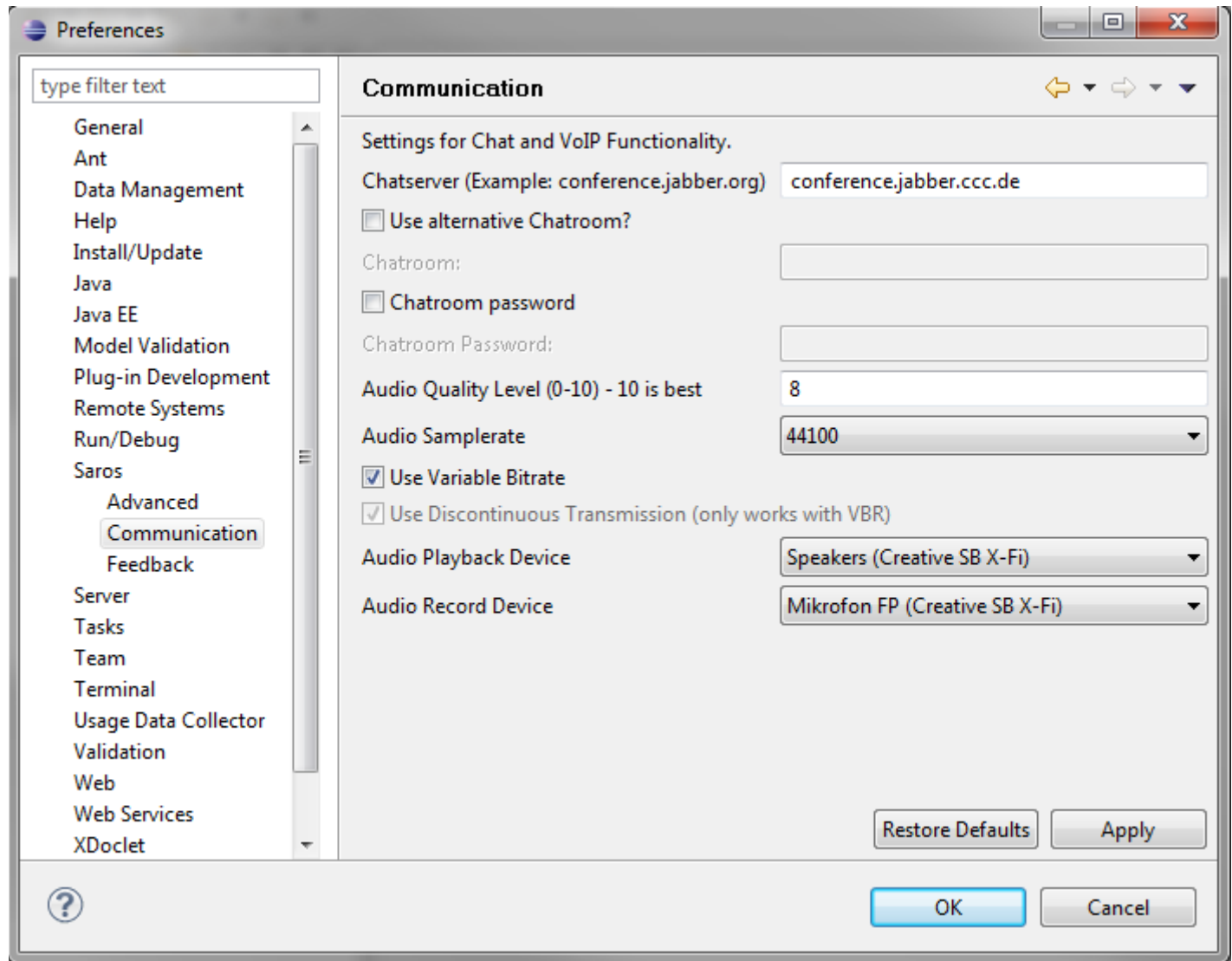


## Stop Dialog



# Usage (VoIP + Chat)

Preference  
Page



- Easy communication possibilities while using Saros without external applications
- Added an important feature of classical Pair Programming to Saros

- More than one chatroom per Saros session
- Inviting a user to a chatroom
- Session host should have some privileges (e.g. kick or ban a user, set a chatroom topic, etc.)
- Changing chatroom name or password during running session

- VoIP session with more than two users
- Alternative encoder
- Changing encoder settings during running VoIP session

**Vielen Dank!**