ITU-T Kaleidoscope 2009
Innovations for Digital Inclusion

An Asterisk Based Framework for e-Learning using Open Source Protocols and Open Source Software

Alfredo Terzoli
Rhodes University, South Africa
a.terzoli@ru.ac.za

Mar del Plata, Argentina, 31 Aug – 1 Sep 2009

Outline

- Introduction
- Requirements
- Background
- Proposed Implementation
  - Multimedia Archive
  - Live Session
- Conclusion

Introduction

- Technology has influenced education sector
- Different levels of access lead to inequalities
- Addressing the gap is needed
- eLearning is a viable solution

Requirements

- Open, shareable and extensible system
- Web enabled
- Multimedia support:
  - Audio
  - Video
  - Instant messaging
  - Presence

Background (1)

- RU/UFH eLearning experience by 128kB/s ISDN connection
  - Monthly rental fee
  - Per minute charges
- RU/UNAM eLearning experience by online eLearning web tool
  - Closed source
  - Lacks flexibility

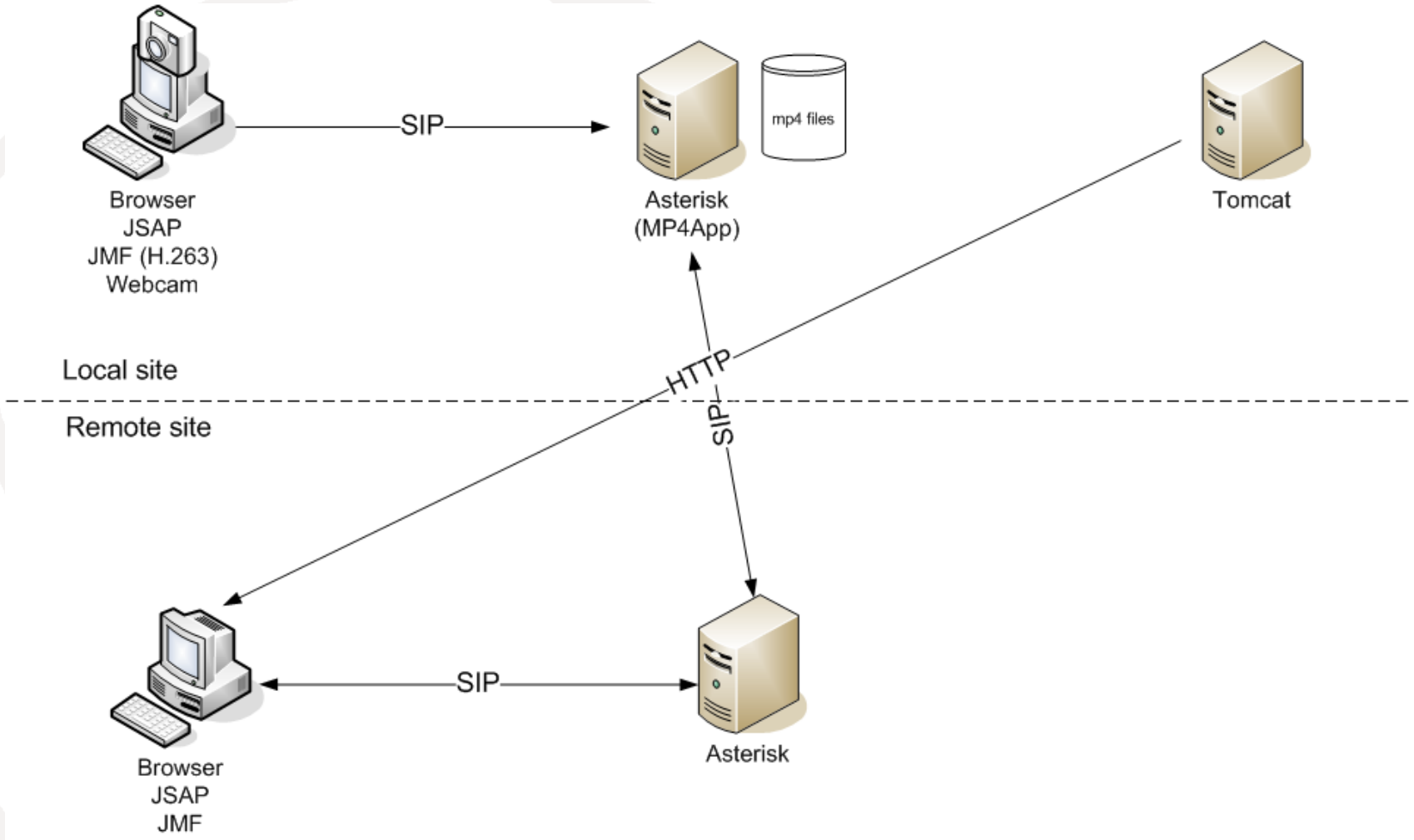
Background (2)

- Asterisk open source IP PBX
  - Control agent (SIP, H323, Jabber, etc)
  - Media server (audio - ilbc, speex, g711u/a, gsm … video - h261,h263 …)
- OpenSER open source SIP router
  - Load balancing with Asterisk
  - Presence server

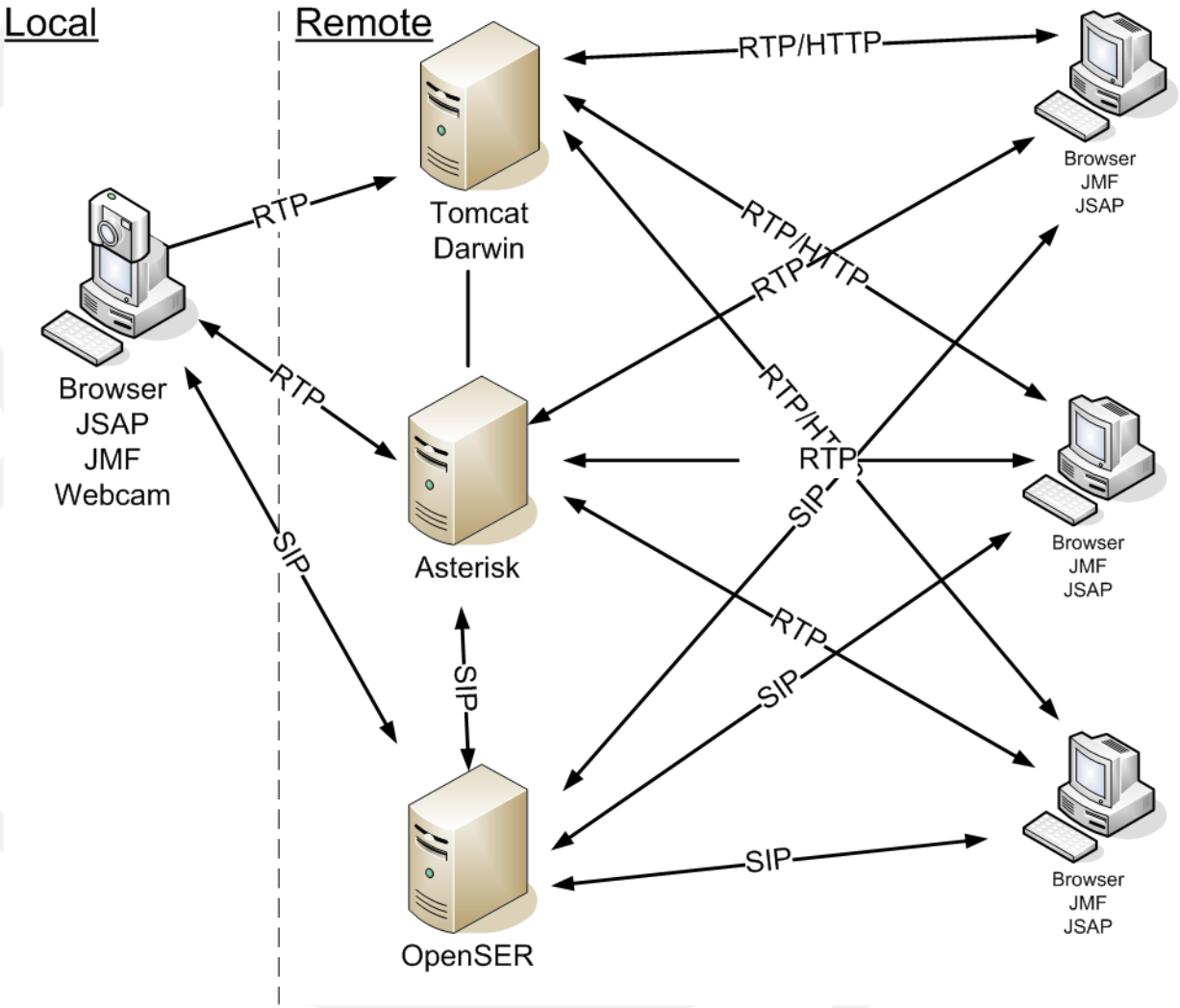
Proposed Implementation (1)

- Two pronged approach:
  - Video archive
    - Using pre-created content
    - Less bandwidth intensive
  - Live virtual classroom
    - Using realtime multimedia
    - More bandwidth intensive

Proposed Implementation (2)



Proposed Implementation (3)



Conclusion

- Web based, Asterisk enabled, integrated eLearning system
- Uses Internet standards and open source software
- Copes with different bandwidth conditions

Thank you…

Mosiuoa Tsietsi – mosiuoat@gmail.com
Zelalem Shibeshi – zelalemss@gmail.com
Alfredo Terzoli – a.terzoli@ru.ac.za

Telkom Centre of Excellence in Distributed Multimedia
Department of Computer Science
Rhodes University
Grahamstown
South Africa
http://coe.ru.ac.za
http://www.cs.ru.ac.za