eduCONF and its potentials to support WebRTC

Bartłomiej Idzikowski, PSNC

3rd TF-WebRTC meeting, Stockholm

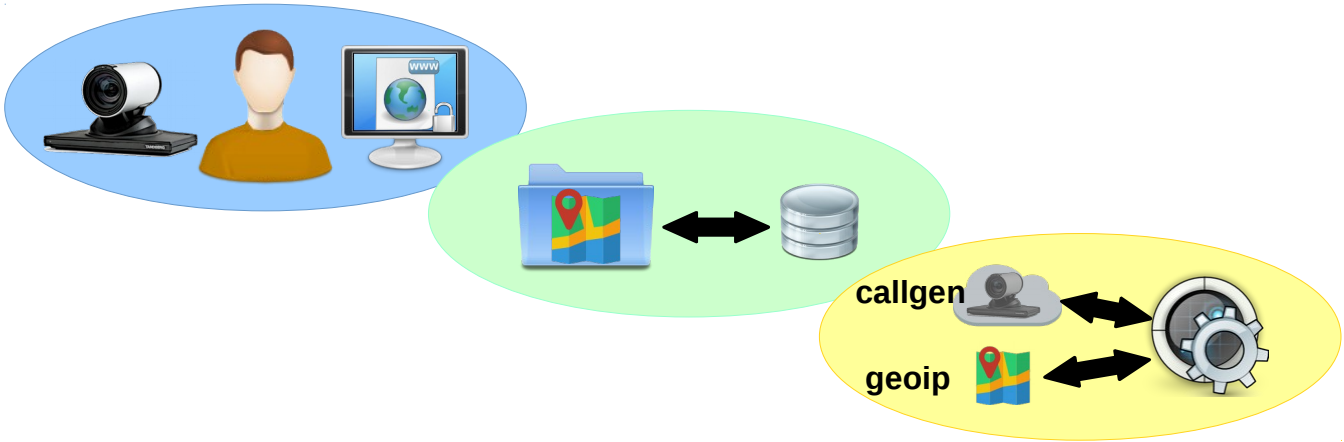
27.10.2015

eduCONF – background

The **main goal** of *eduCONF* is to:

assist research and educational societies in scope of videoconferencing, in particular by affording services:

- testing
- directory
- monitoring

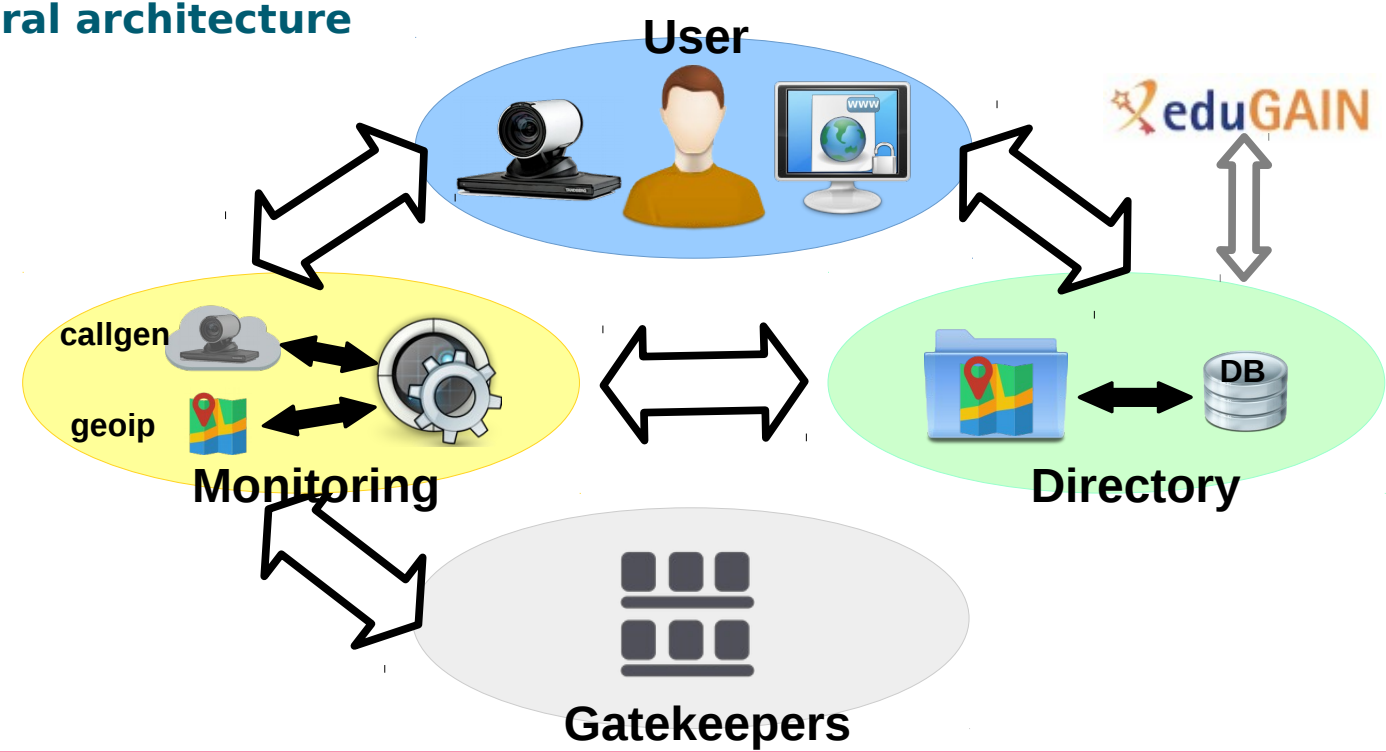


eduCONF – background

General architecture and assumptions

- front-end: easy, transparent and seamless
- back-end: technically sophisticated and complex
- two independent, cooperating service sides:
  - *Directory / Testing* (H.323 + SIP, audio + video)
  - *Monitoring*
- JSON-based communication
  - designed to make / confirm requests
  - full control of all test stages
- usage of suitable GÉANT services - eduGAIN

General architecture



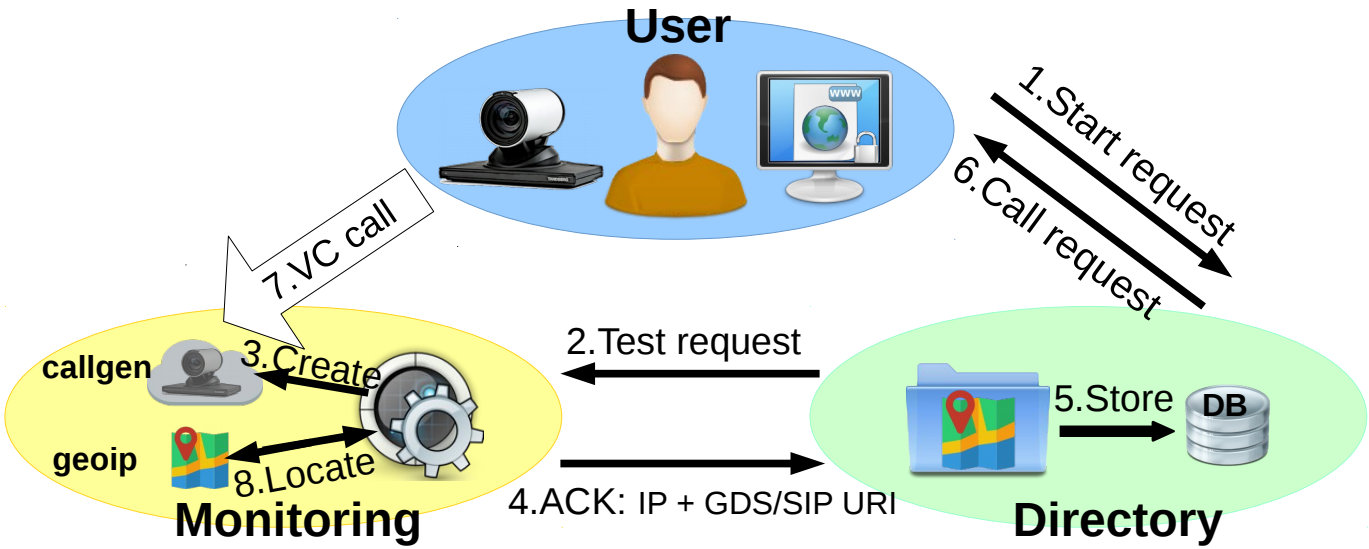
eduCONF – background

Three basic steps to be performed by users:

- call provided test number endpoint (H.323 / SIP)
- answer incoming call (H.323 / SIP)
- update and confirm information on the web-page

How does it work in the background?

Dial request – communication scheme (simplified)



eduCONF – background

Dial request - sequence:

- User chooses test type(s) and slides “start” button
- Testing engine sends request to Monitoring
- Monitoring prepares test infrastructure:
  - creates virtual terminal (callgen, Opal VoIP)
  - registers virtual terminal to production gatekeeper
  - sends connection details to Testing engine
- Testing engine displays call request to user (GDS / SIP URI / IP)
- User makes a call to virtual terminal
- **…**

eduCONF – background

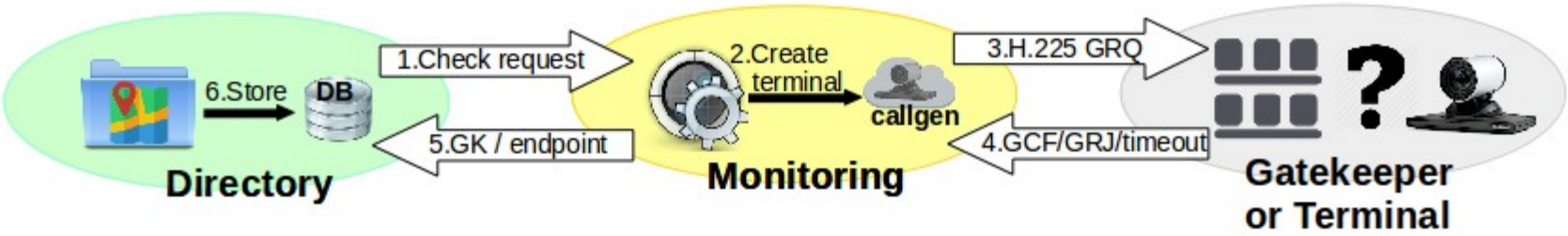
Dial request – sequence:

- …
- Monitoring makes connection analysis:
  - result and status of the call
  - users terminal data: IP, E.164 alias, ID alias
  - geo-positioning
  - terminal / gatekeeper validation process

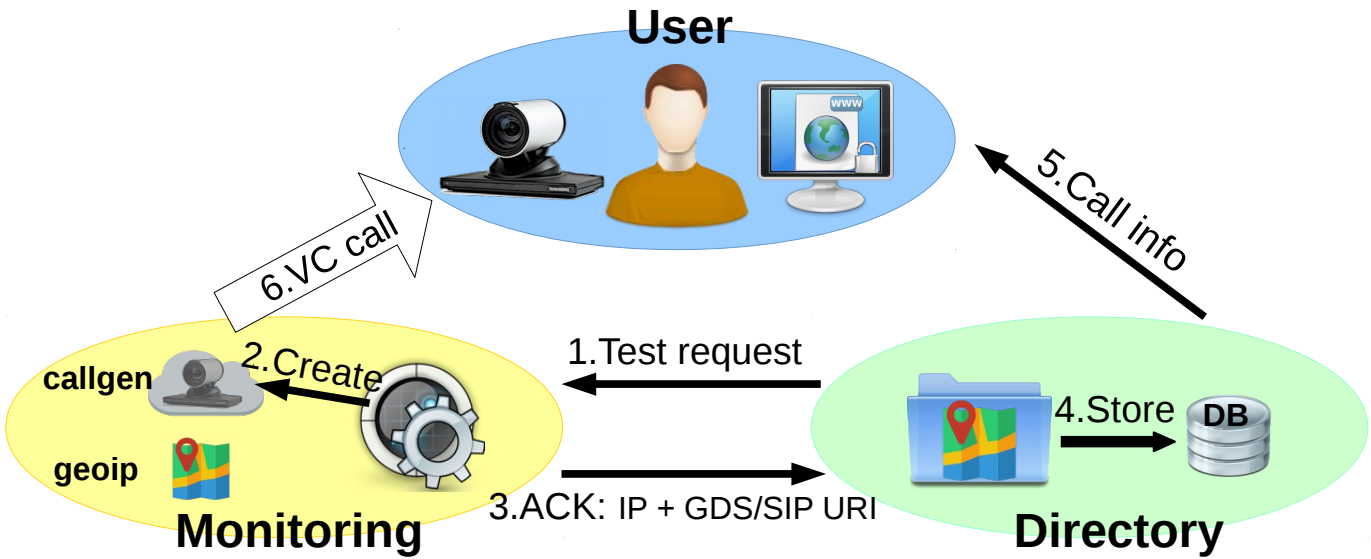
Issue: IP address of the terminal may be covered by IP of the gk (Q.931)

eduCONF – background

Gatekeeper / terminal validation process (simplified)



Call-back – communication scheme (simplified)



eduCONF – background

Call back - sequence:

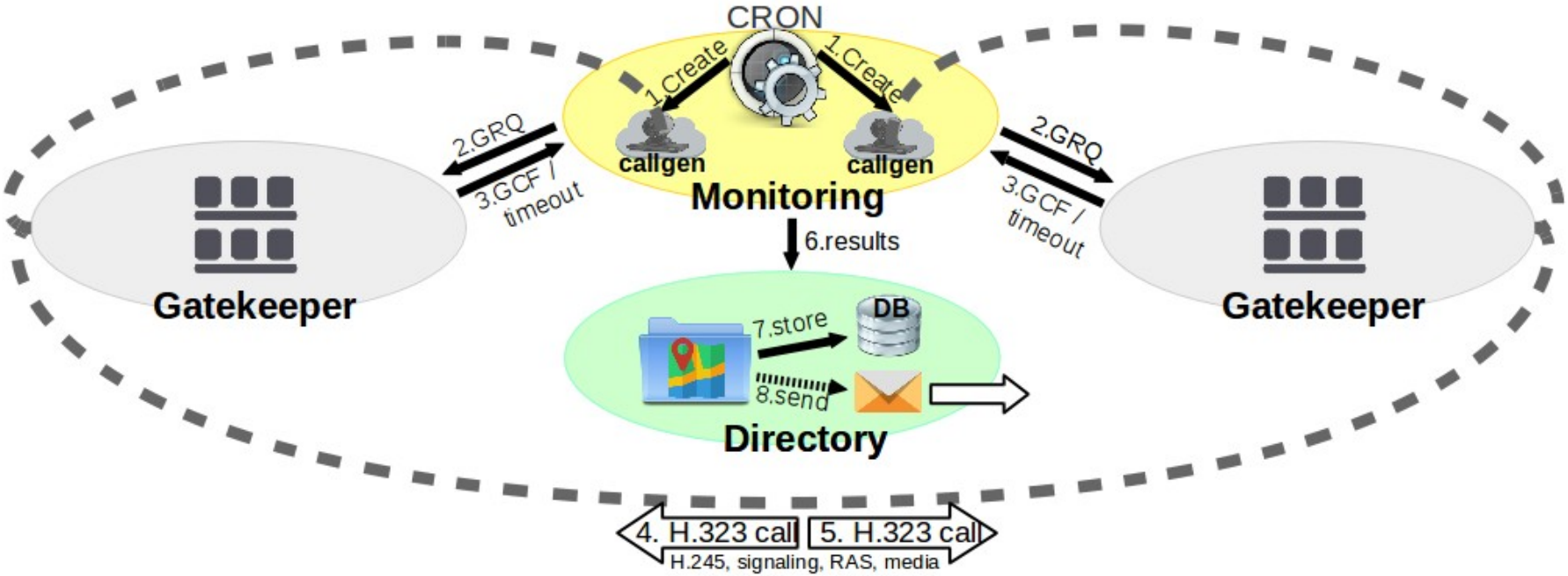
- Testing engine sends request to Monitoring
- Monitoring prepares test infrastructure
  - creates virtual terminal (callgen, Opal VoIP)
  - registers it to production gatekeeper
  - sends connection info to Testing engine
- User is notified to expect incoming call
- Monitoring performs a test call to users terminal
  - basing on addressing data gathered during previous stages of the process
- User answers the incoming call

eduCONF – background

Update and confirm information

- Step required only for Directory purposes
- User is asked to:
  - update contact and addressing details
  - add *google street view* location photo
  - confirm all collected data
- in order to add terminal to directory, user has to be logged in
  - eduGAIN / local accounts

Cyclical test of VC infrastructure – communication scheme



eduCONF – background

Cyclical test of VC infrastructure

- automated test calls are base for validation of infrastructure
- gatekeepers from institutions are added by admins:
  - IP address + 2 GDS (E.164) numbers reserved for testing purposes
  - type of gatekeeper (global / national / organizational / other)
  - e-mail address for notifications (optional)
- 2 virtual terminals register to gatekeepers and makes inter-zone connections
- Full mesh for all gatekeepers is covered during test sequence
- Visualization of results: map with appropriate colors
- e-mail based notification engine

eduCONF – current development

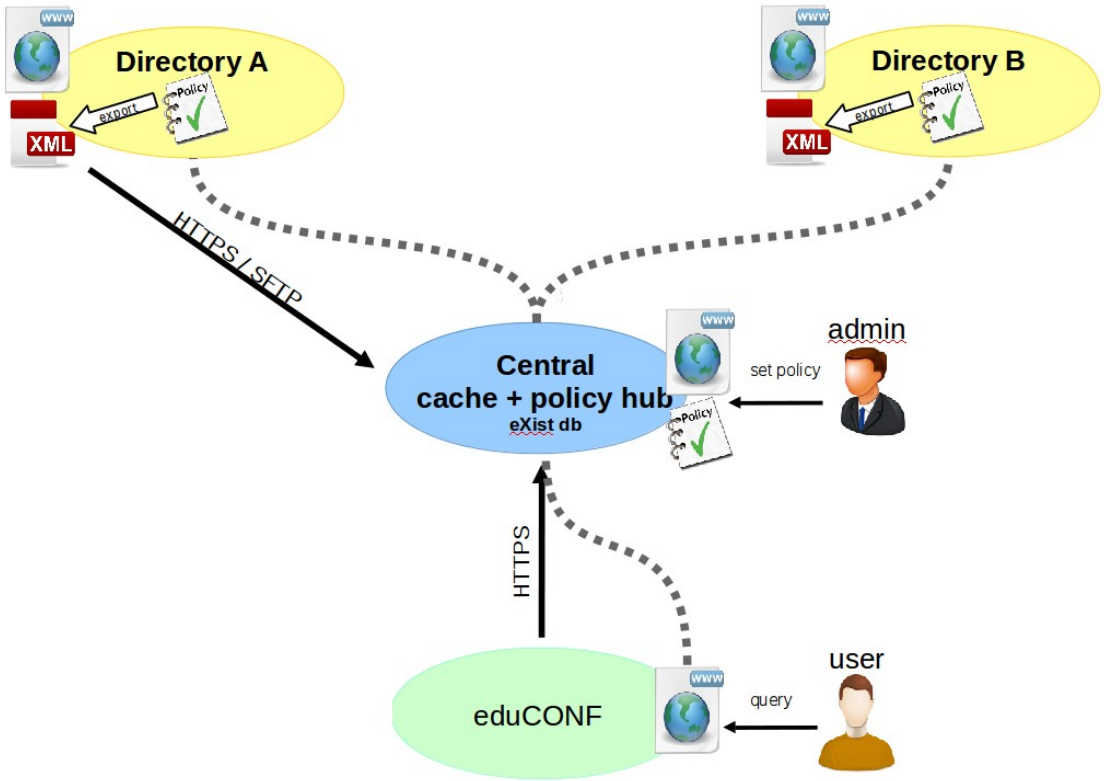
Integration of Directories

- goal: integrate directory services from different institutions
- 2-stage policy adjustment
  - local
  - central
- XML export engines: easiest way for export by remote parties
- multiple other export engines (possible: FTP, SFTP, API, JSON, ...)
- central administration

eduCONF – current development

Directories integration

overall idea

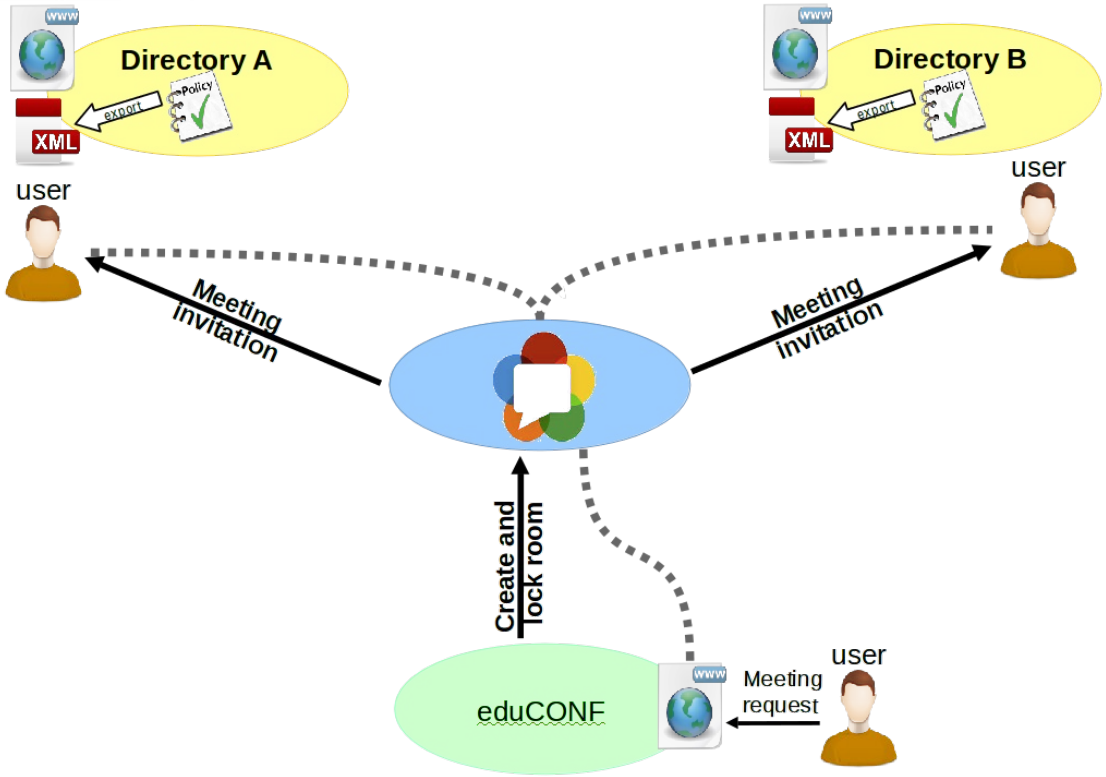


eduCONF – WebRTC integration

WebRTC integration:

directory + VC on demand

- using data from directory to contact remote parties
- 1 simple “connect” button!



eduCONF – WebRTC integration

Discussion: other possible areas of cooperation

- including personal WebRTC rooms to Directory
  - room approach vs. user approach
- monitoring of WebRTC core infrastructure
- testing personal rooms
- testing users browsers
- testing gateways interoperability
- GN4-1 application
- …

Thank you!

educonf-directory.geant.net

educonf@geant.net

idzik@man.poznan.pl