

Integrating videoconferencing into everyday applications

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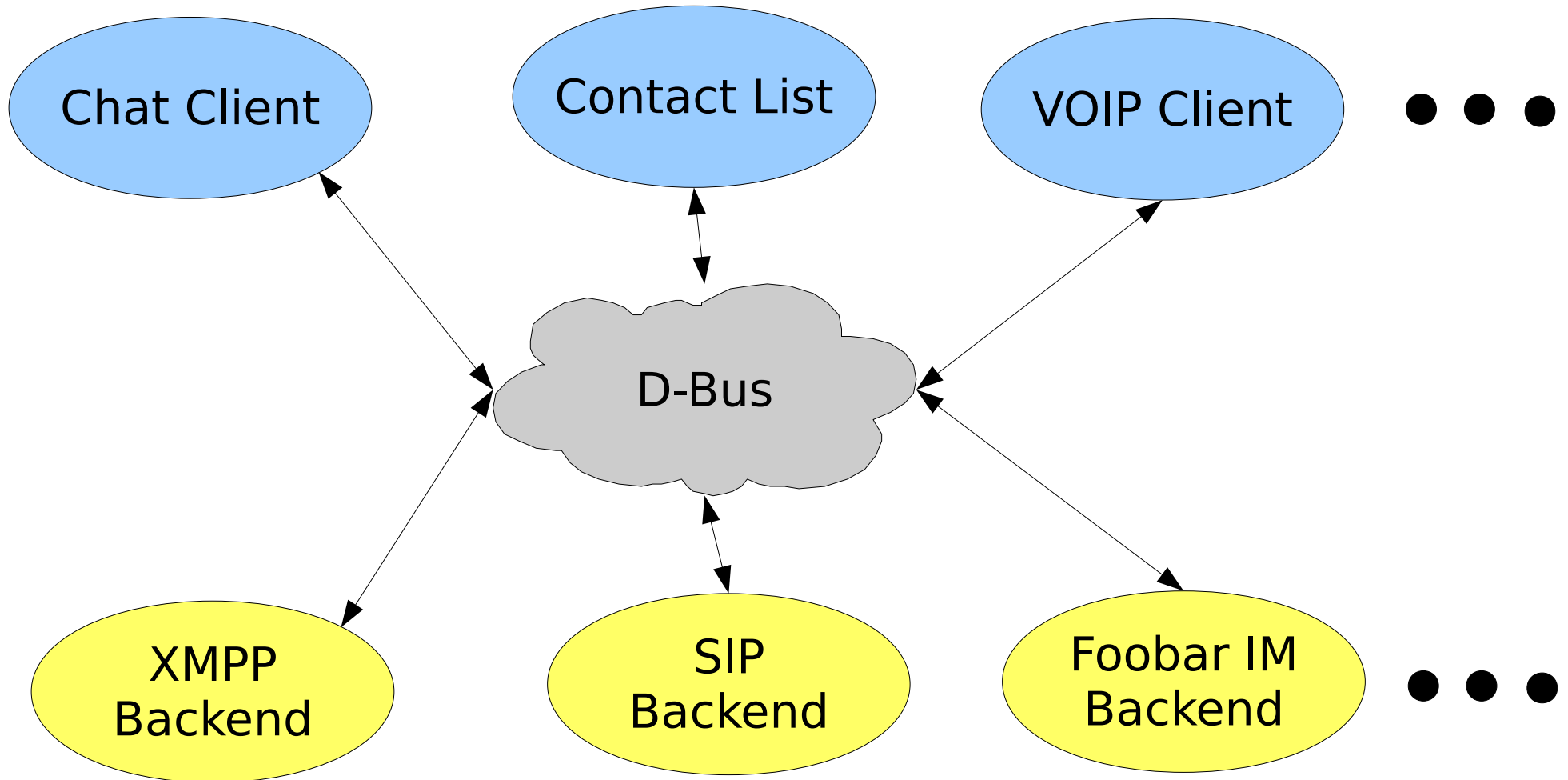
Ingredients

- Call signalling
 - Telepathy
- Media Framework
 - GStreamer
- Call protocol abstraction
 - Farsight 2

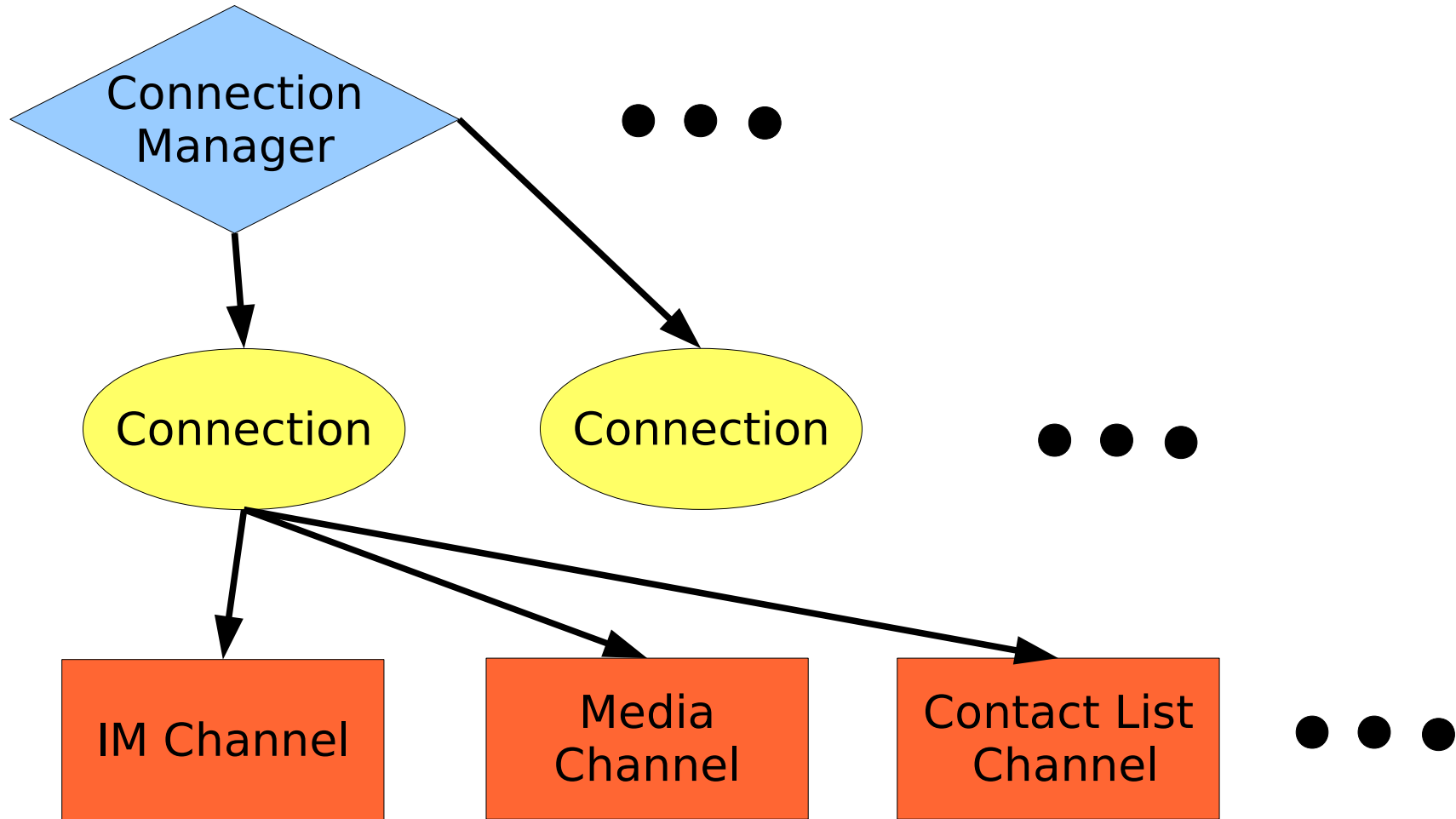


Telepathy

Telepathy: Overview



Telepathy: Concepts





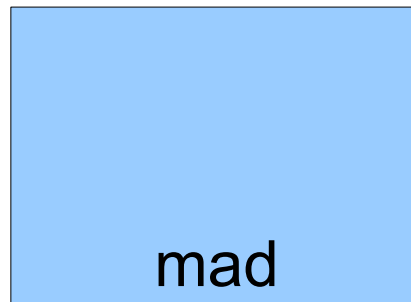
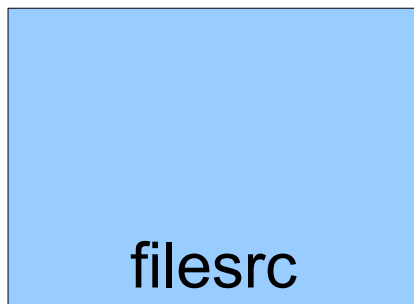
gstreamer

Introducing GStreamer

- Assemble media pipelines from elements
- Four major types of elements:
 - Sources (camera, microphone, file, etc)
 - Sinks (screen, speakers, file, etc)
 - Transformational elements (encoder, decoders, multiplexers, demultiplexers, etc)
 - Also, complex “magical” elements (playbin, decodebin, Farsight2, etc)

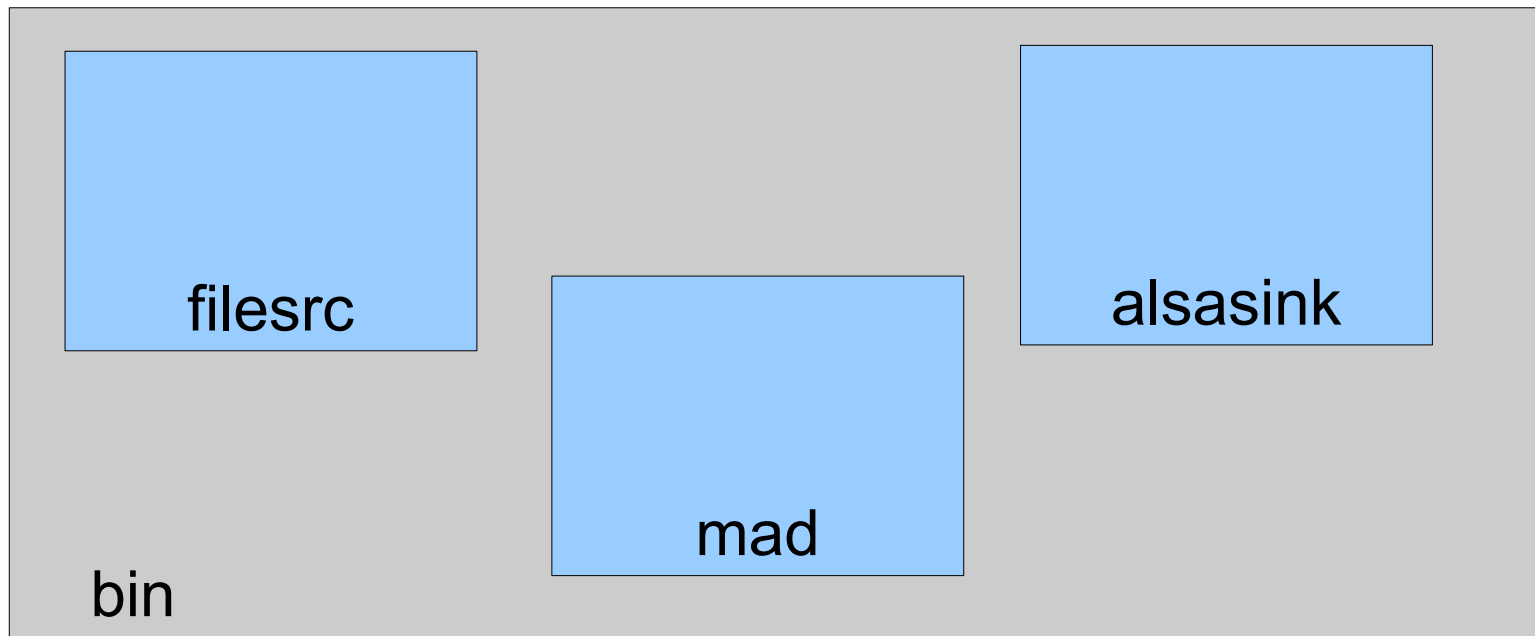
Basic GStreamer

- Elements



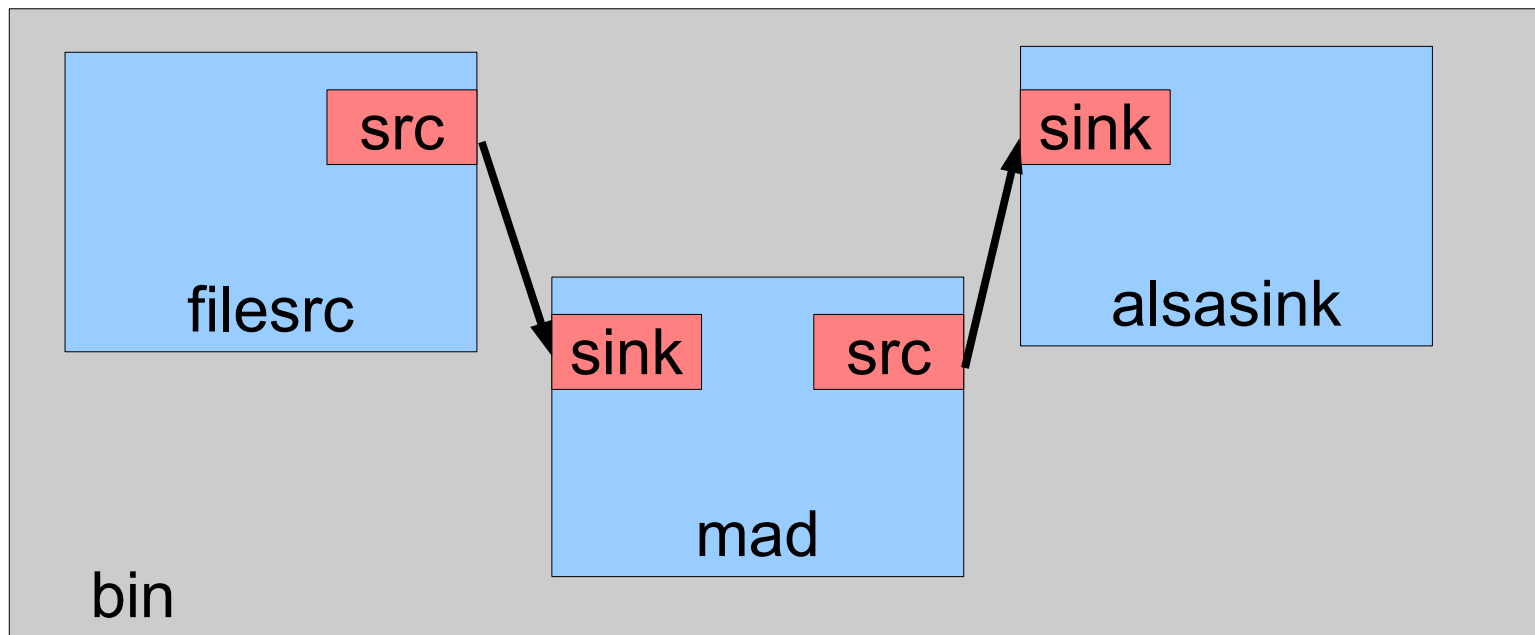
Basic GStreamer

- Elements
- Bins

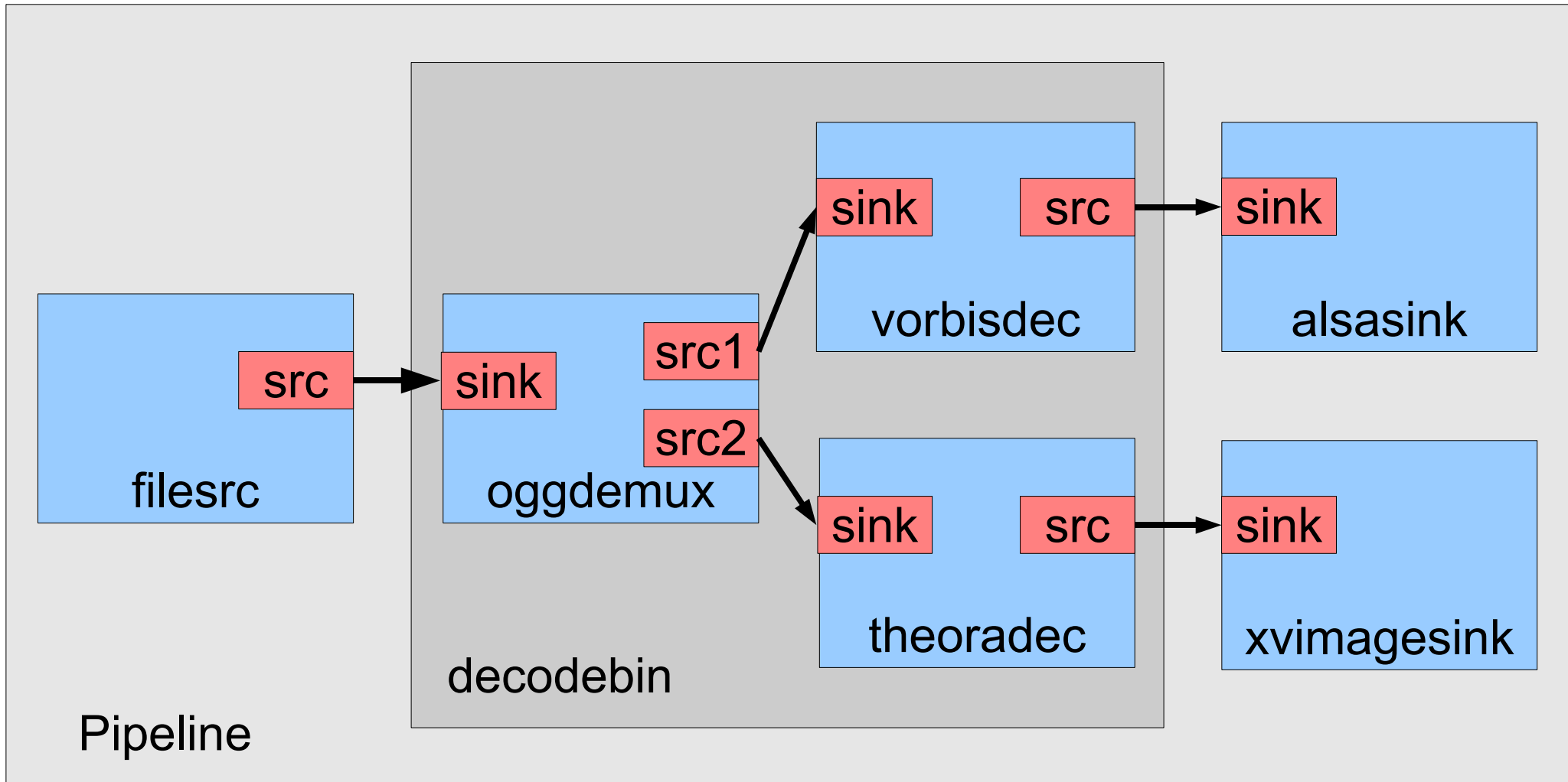


Basic GStreamer

- Elements
- Bins
- Pads



More Complex Pipelines



Farsight 2: Overview

- Audio & video conferencing abstraction
- Multiple protocols abstracted
 - RTP (XMPP Jingle, SIP, etc)
 - MSN Webcam (almost there)
 - Others...
- GStreamer element

High level objects

- Participants
 - People
- Sessions
 - Media types (audio, video)
- Stream
 - Intersection of Participant and Session

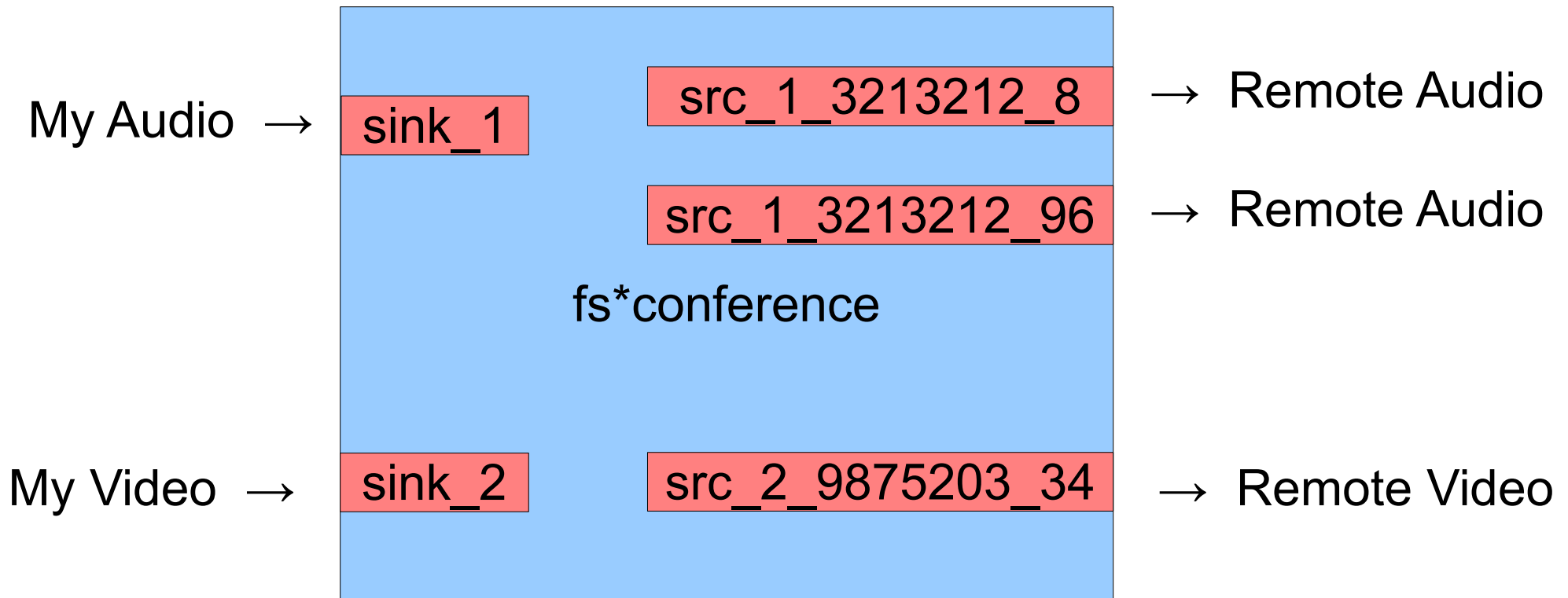
Farsight 2: RTP

- Complete RTP with RTCP
 - Including A/V sync
- DTMF, codec negotiation,
- Multiple transports for RTP
 - ICE (standard, Google and MSN)
 - Unicast UDP
 - Multicast UDP
 - Application (soon)

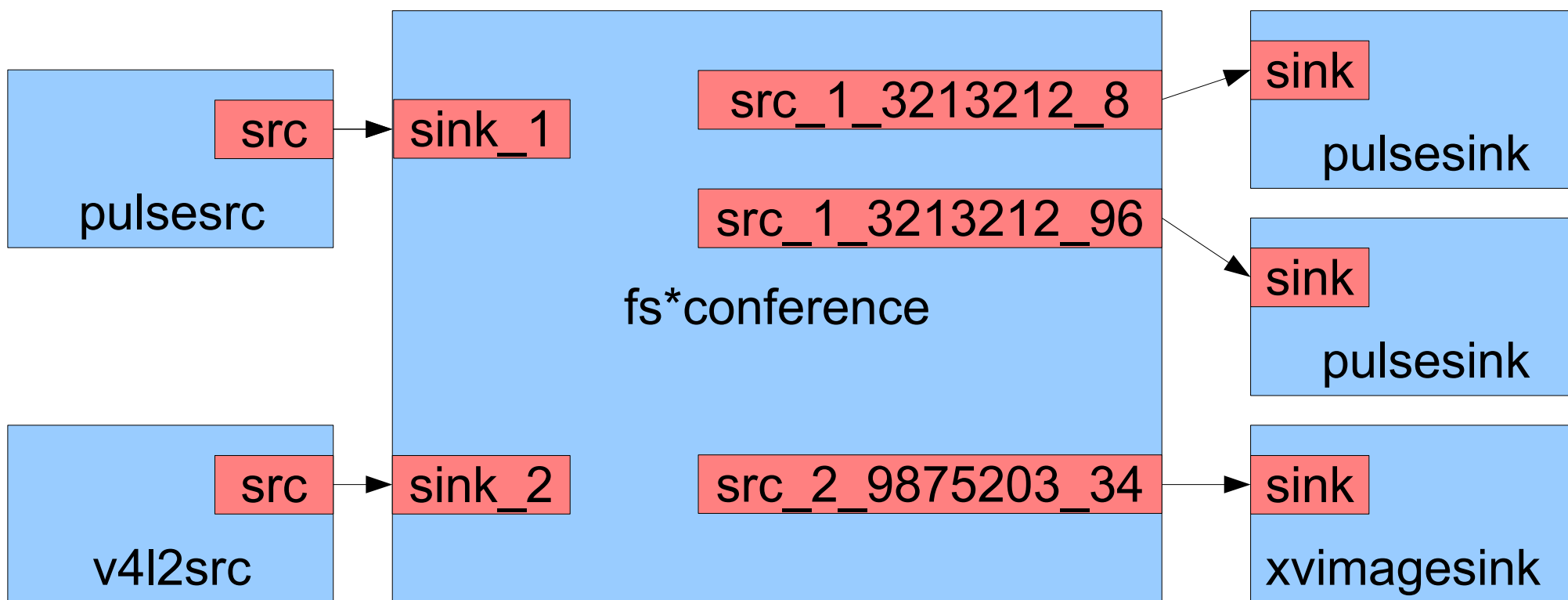
Telepathy Farsight integration

- Telepathy-Farsight library
- Hides all signalling
 - Easy API
- Telepathy streamed media interface limited
 - Only one-to-one
 - Strange session/stream separation

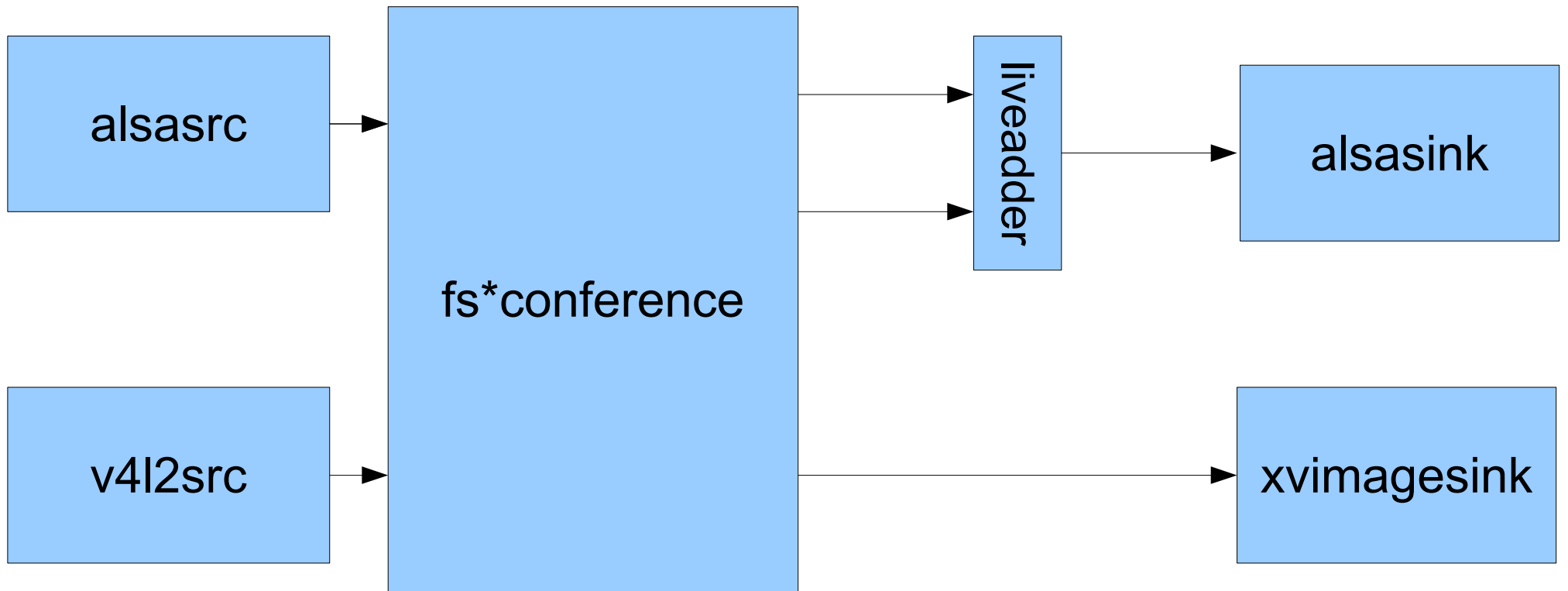
Farsight 2 element



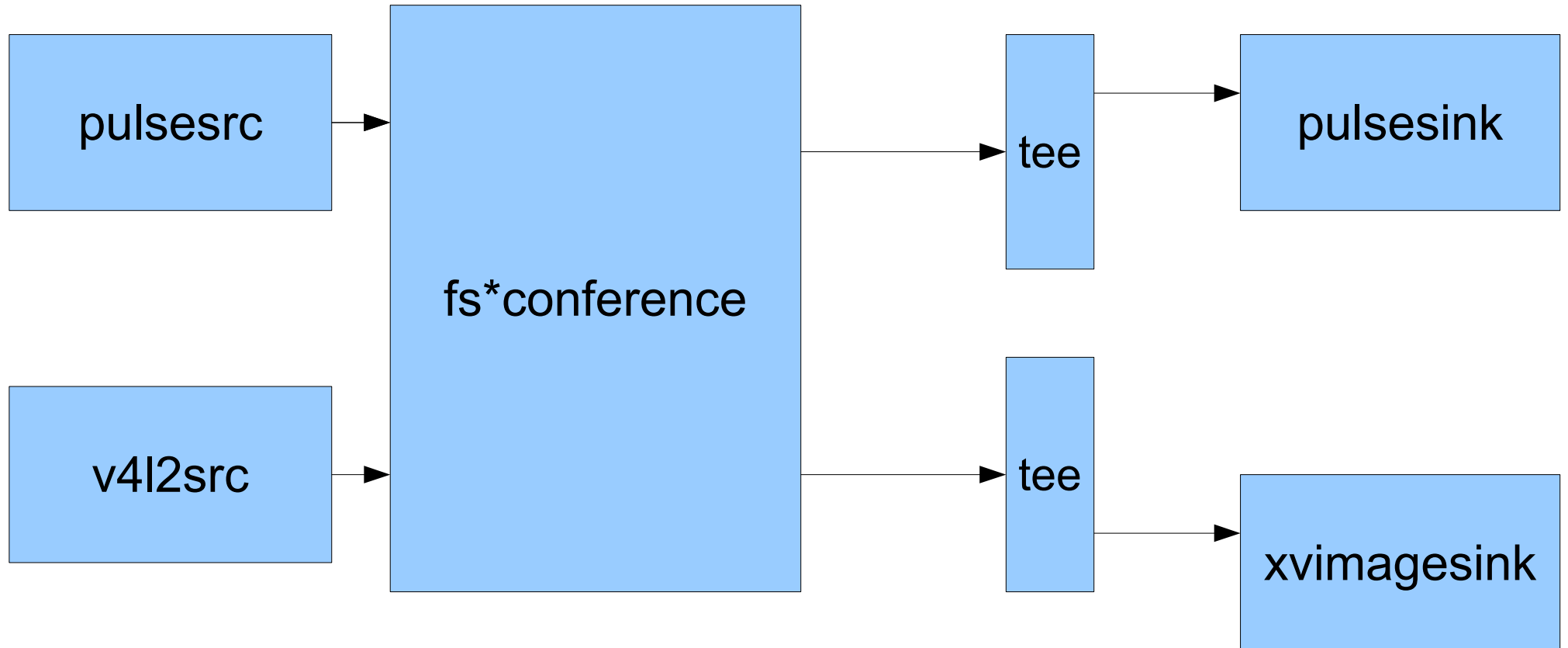
Integrated Farsight 2: Simple Case



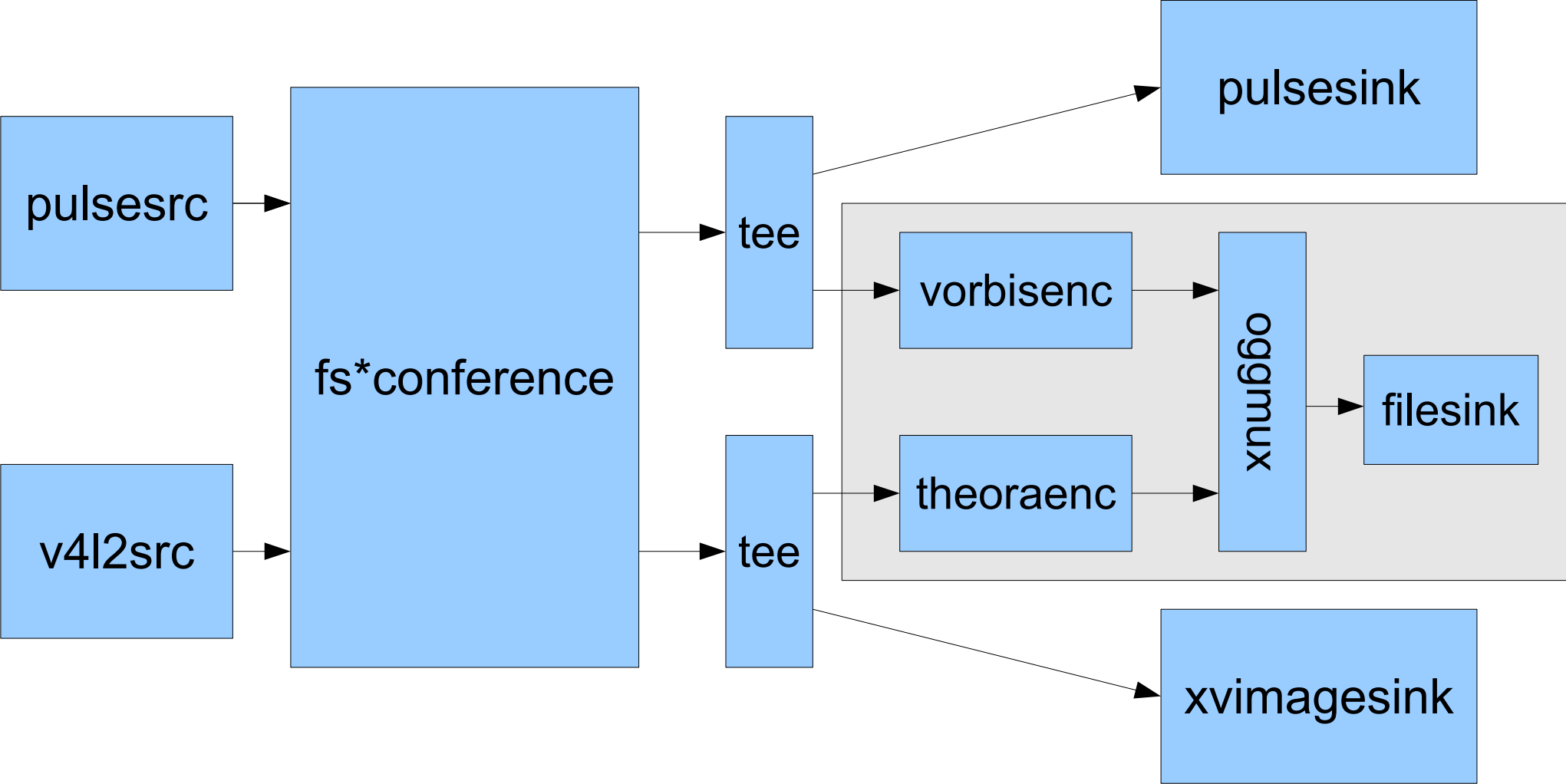
Another simple case



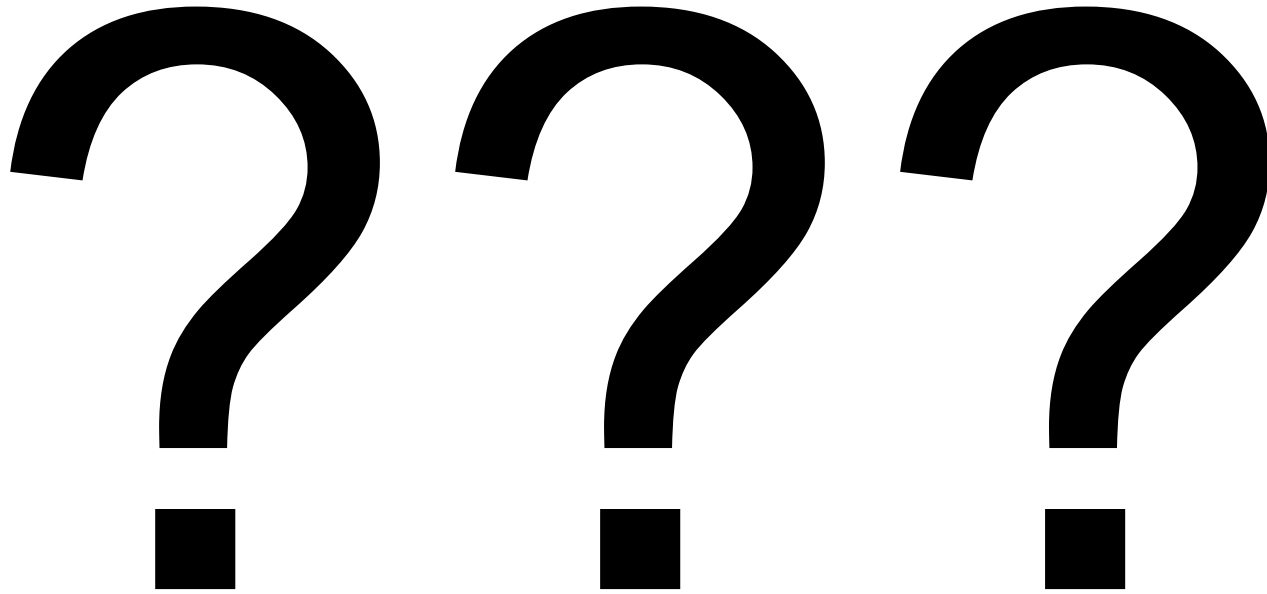
Adding More stuff



Add recording



Demo



Steps to get a Telepathy call

1. Get D-Bus bus
2. Get Telepathy Connection & Contact
3. Find the handle for that contact
4. Get a Telepathy Channel
5. Wrap it into Telepathy-Python
6. Wrap it into Telepathy-Farsight
7. Attach session-created and session-created
8. Add members
9. Request streams

Steps to get a Telepathy call

10. Put the conference into the pipeline on Telepathy session creation
11. Add/Link the sink/source on stream creation

Extras

- Hook up UI to add added streaming-side features
- Example:
 - The Record button adds the recording pipeline

What's missing

- Mission Control 5
 - New Telepathy Specification
 - Allows for proper channel dispatching
- New PiTiVi
 - More integration
 - Input
 - Output

What else?

- Collaborative text editing
 - OOO, Abiword, Gnumeric
- Stream slides with Evince
- Remote desktop viewing
- Other ideas?

Thank you

- #farsight, #telepathy, #gstreamer, #pitivi @ FreeNode
- <http://farsight.freedesktop.org/>
- <http://telepathy.freedesktop.org/>
- <http://gstreamer.net/>