<div align="center">Transmission of High Quality Audio over IP Networks</div>

1 General Concept of Streaming

```
                    ┌──────────────┐
                    │ Audio Source │
                    └──────────────┘
                           │
                           ▼
                       ┌───────┐
                       │  ADC  │
                       └───────┘
                           │
    ┌──────────┐           ▼
    │ Digital  │     ┌──────────────┐
    │ Source   │────▶│ Compression  │
    └──────────┘     └──────────────┘
                           │
                           ▼
                  ┌────────────────────┐
                  │ Storage (Temp/Perm)│
                  └────────────────────┘
                           │
                           ▼
              ┌──────────────────┐      ┌──────────────┐
              │ Primary/Streaming│─────▶│  Protocol:   │
              │     Server       │      │ AES67/Dante  │
              └──────────────────┘      └──────────────┘
                           │
                           ▼
              ┌────────────────────────┐
              │ Net Transport (Internet)│
              └────────────────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │   Receiver   │
                    └──────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │    Buffer    │
                    └──────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │   Decoder    │
                    └──────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │ Wave Driver  │
                    └──────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │     DAC      │
                    └──────────────┘
                           │
                           ▼
                    ┌──────────────┐
                    │    Output    │
                    └──────────────┘
```
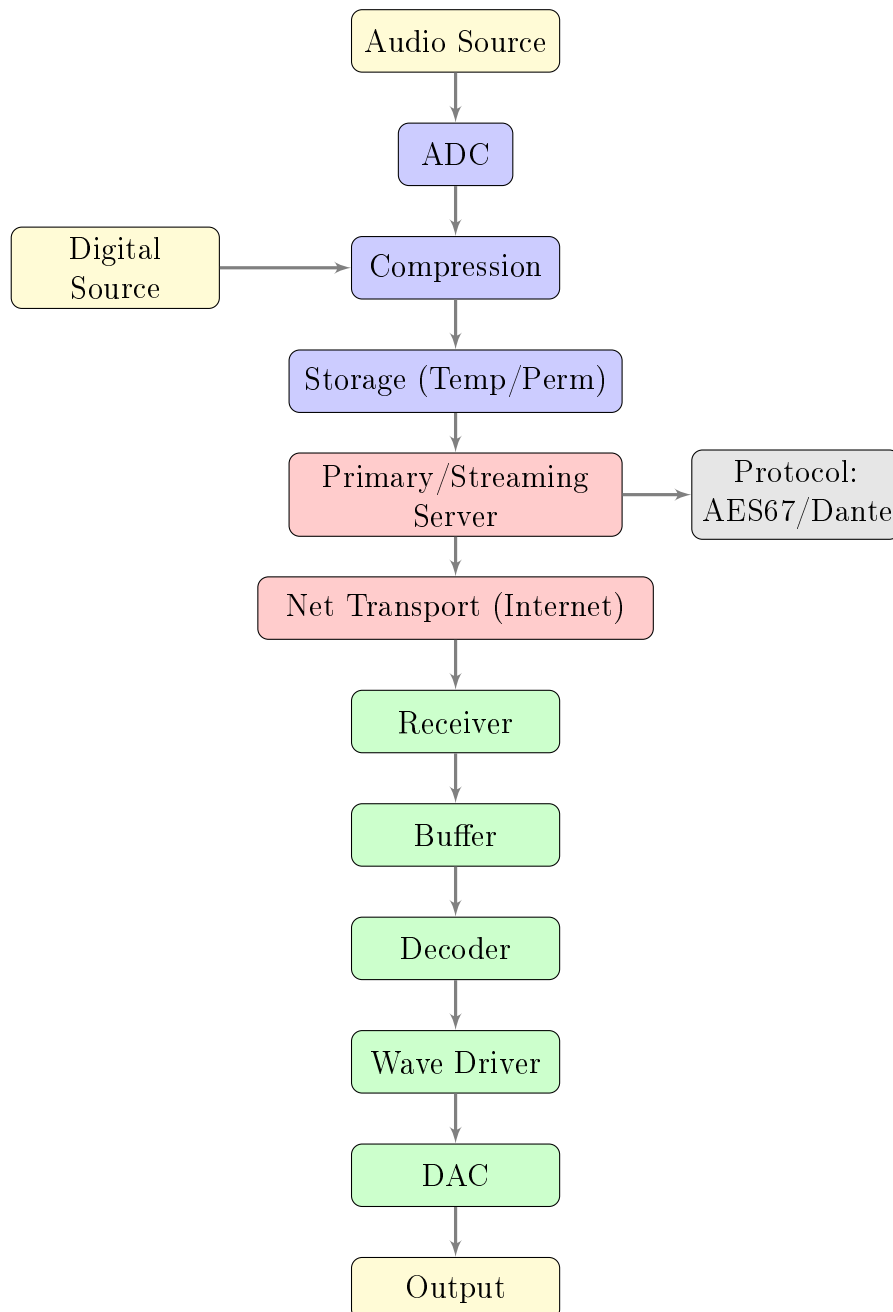
2   Long Term Goals

-

3   Issues to Be Addressed

3.1   Overall Challenges

- low end-to-end (overall) delay in order to have high Quality of Experience (QoE)

- dealing with varying bandwidth (system scalability)

3.2   Client

- encoder: hardware or software

- encoder optimisation: it may contribute to the total delay

- error protection

3.3   Transport

3.4   Enduser

- Choosing the audio quality should be an option for either the sender or the receiver, depending on their broadband speed.

    - better quality — higher broadband speed
    - preferably loseless compression

- error concealment: packet loss replaced by the decoder

- scalable format — same media stream should be used on wide range of devices to avoid transcoding (which will increase overall delay)

AES67 is a briding protocol between Ravenna, Dante, etc . . .

4   First Iteration

- stereo in, stereo out

- no hardware involved

- plug-in format (VST and/or AU)

- using the same network, not over the internet

- loseless coding

Consider the following:

- version control

- cross-platform development tools (such as CMake)

- visual feedback (depends on the user's environment)

Useful example: VST3NetSend on GitHub