

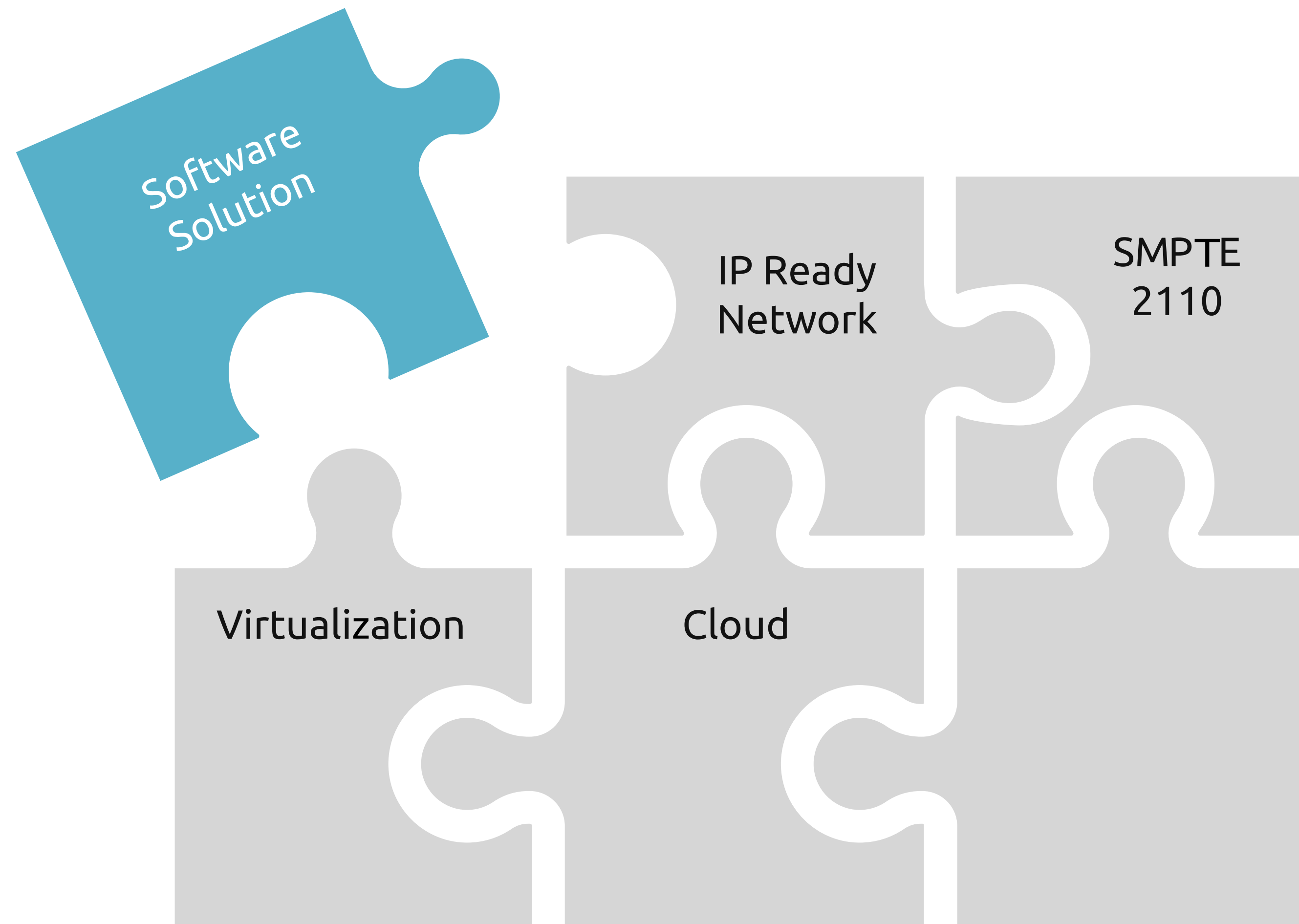


Support of SMPTE 2110 in FFmpeg

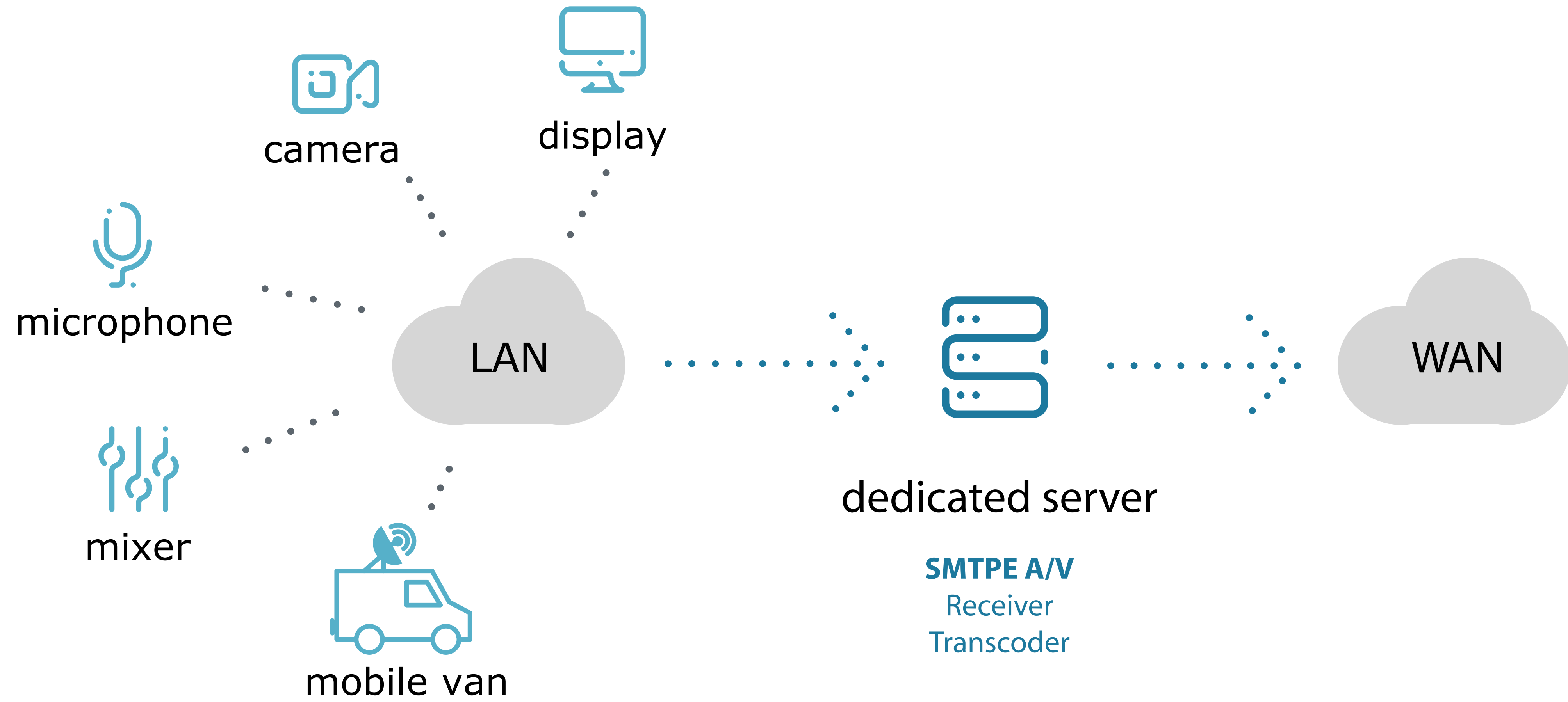


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The problem: SMPTE 2110 on a generic hardware



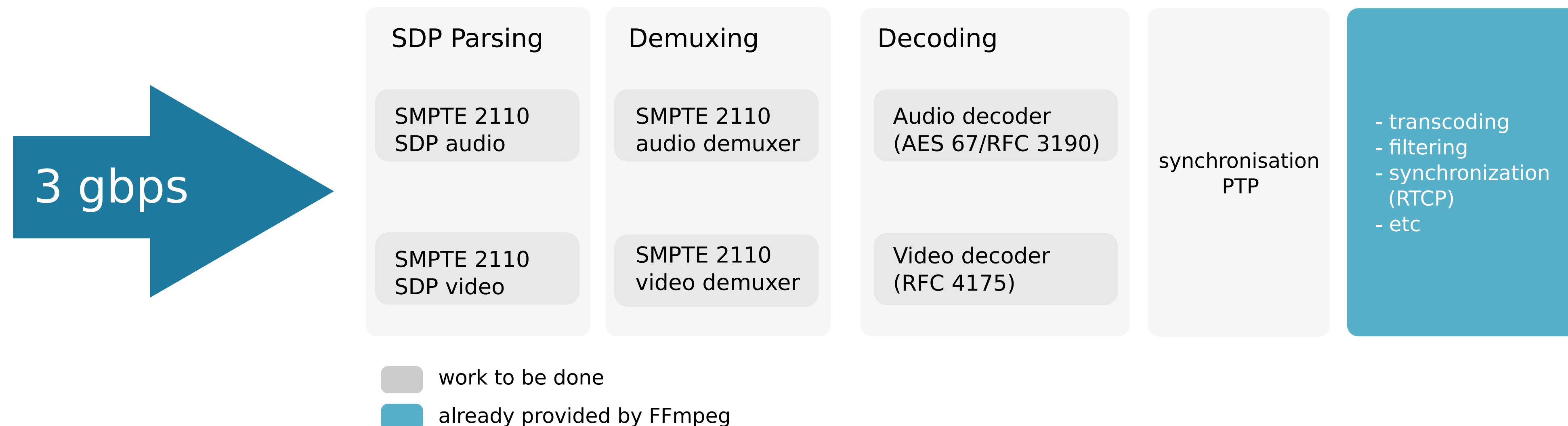
What we have achieved



Our work with CBC / Radio Canada

- Doubts on the ability of FFmpeg to handle 3 Gbps
- Use of Real Time Protocol (RTP) over udp

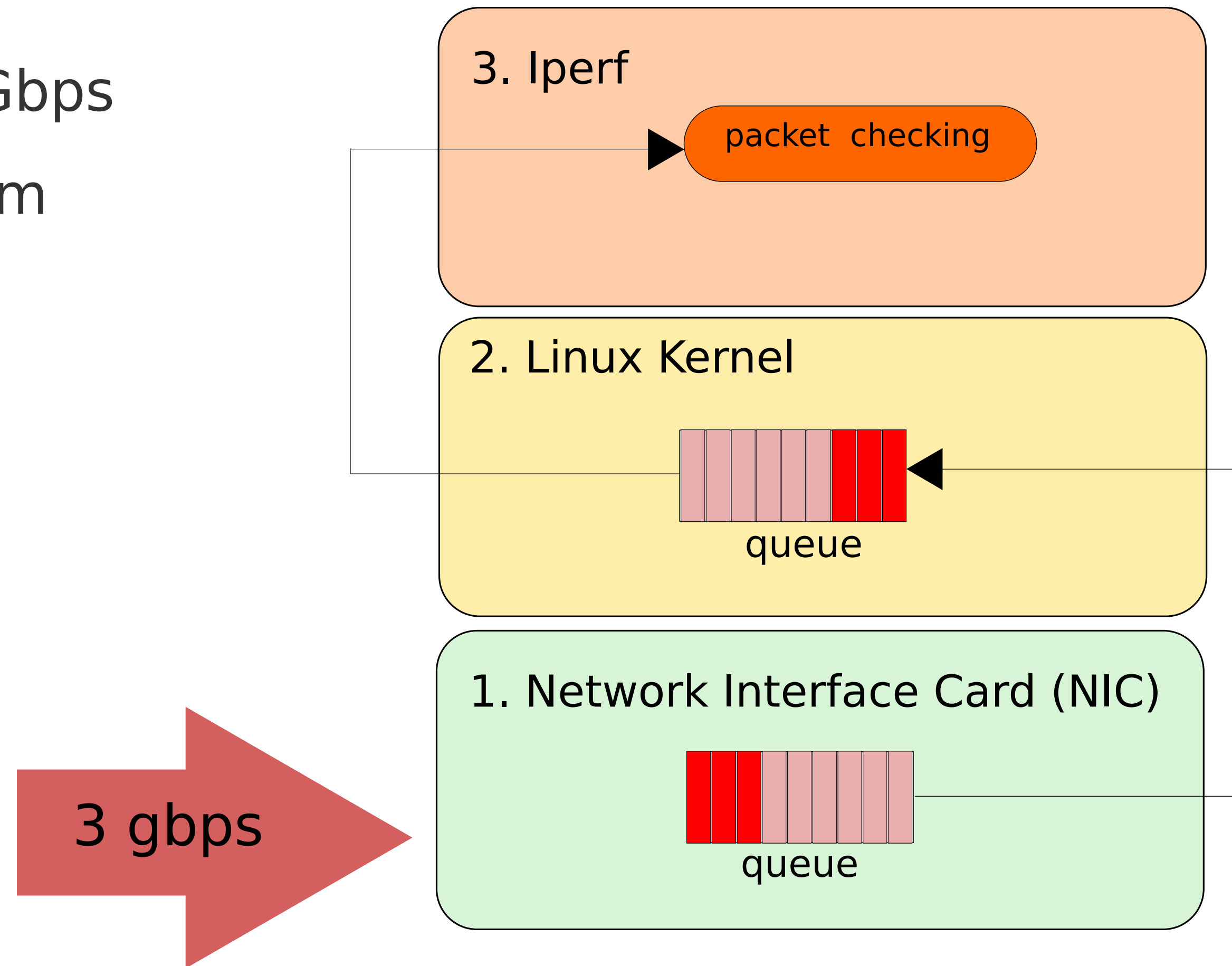
Packets can be dropped !



Analysis

- Check first if Linux can handle 3 Gbps
- Use iperf to measure the maximum achievable bandwidth

<http://iperf.fr/>



Conclusion

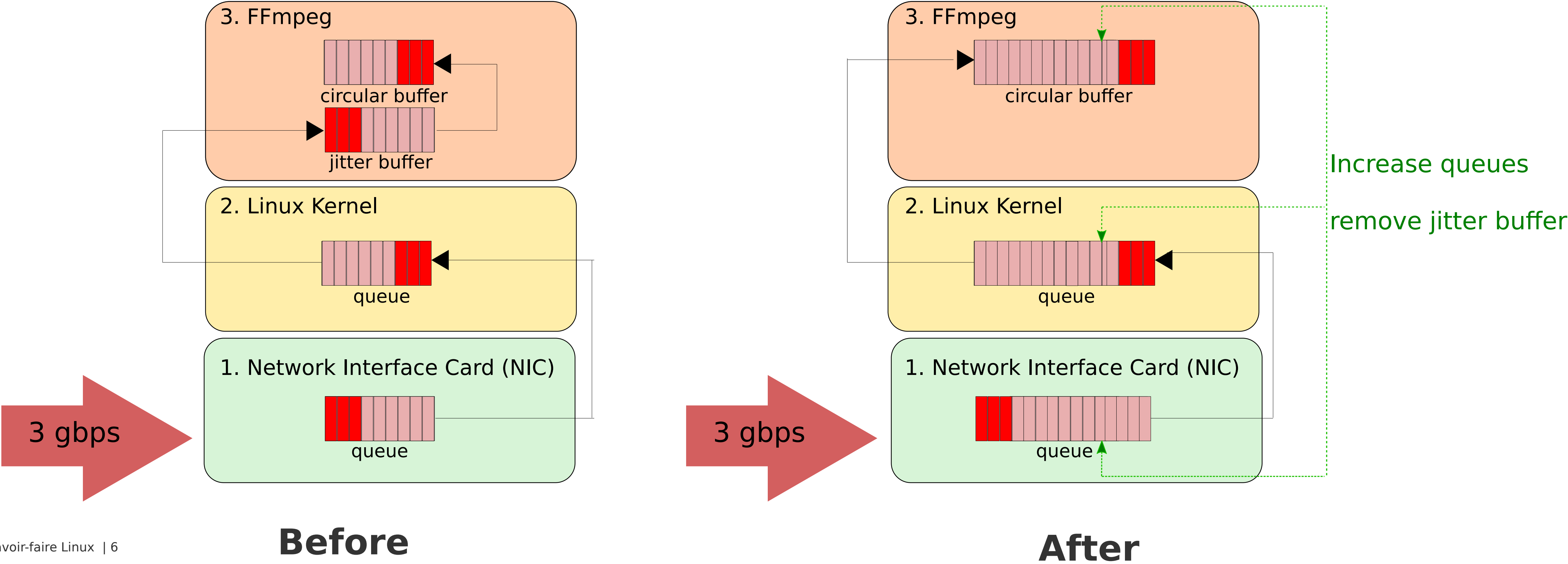
The software should:

1. Deal with maximal Maximal Transmission Unit (MTU) (around 1400)
2. Use minimal processing per packet
3. Increase the queues (NIC, kernel)

SMPTE 2110 receiver



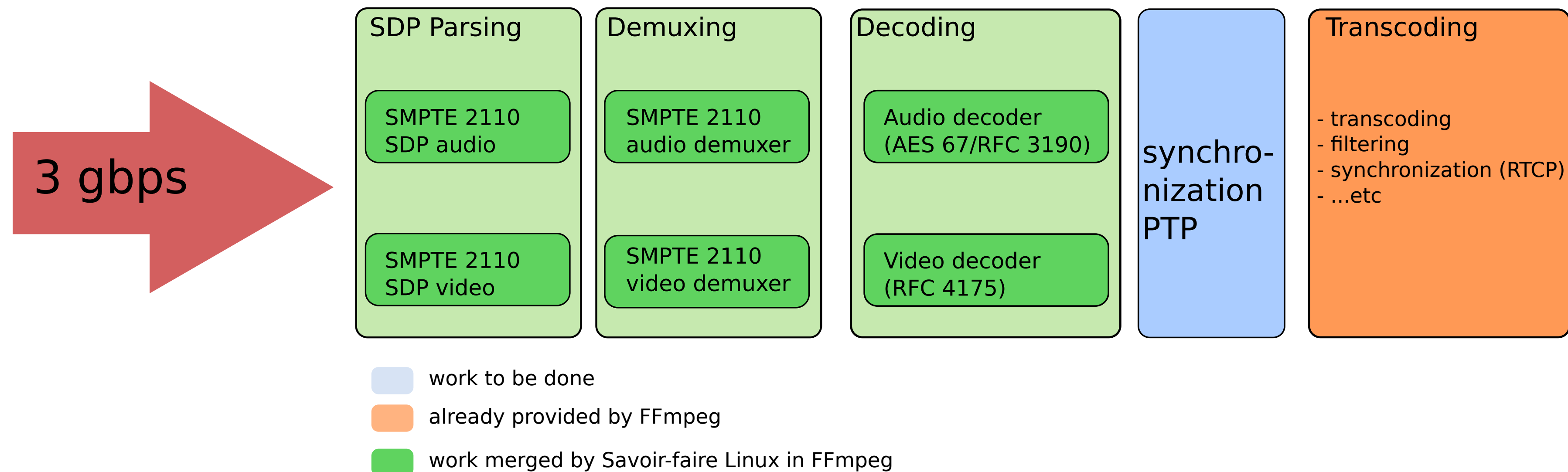
Optimizations done



Code merged!



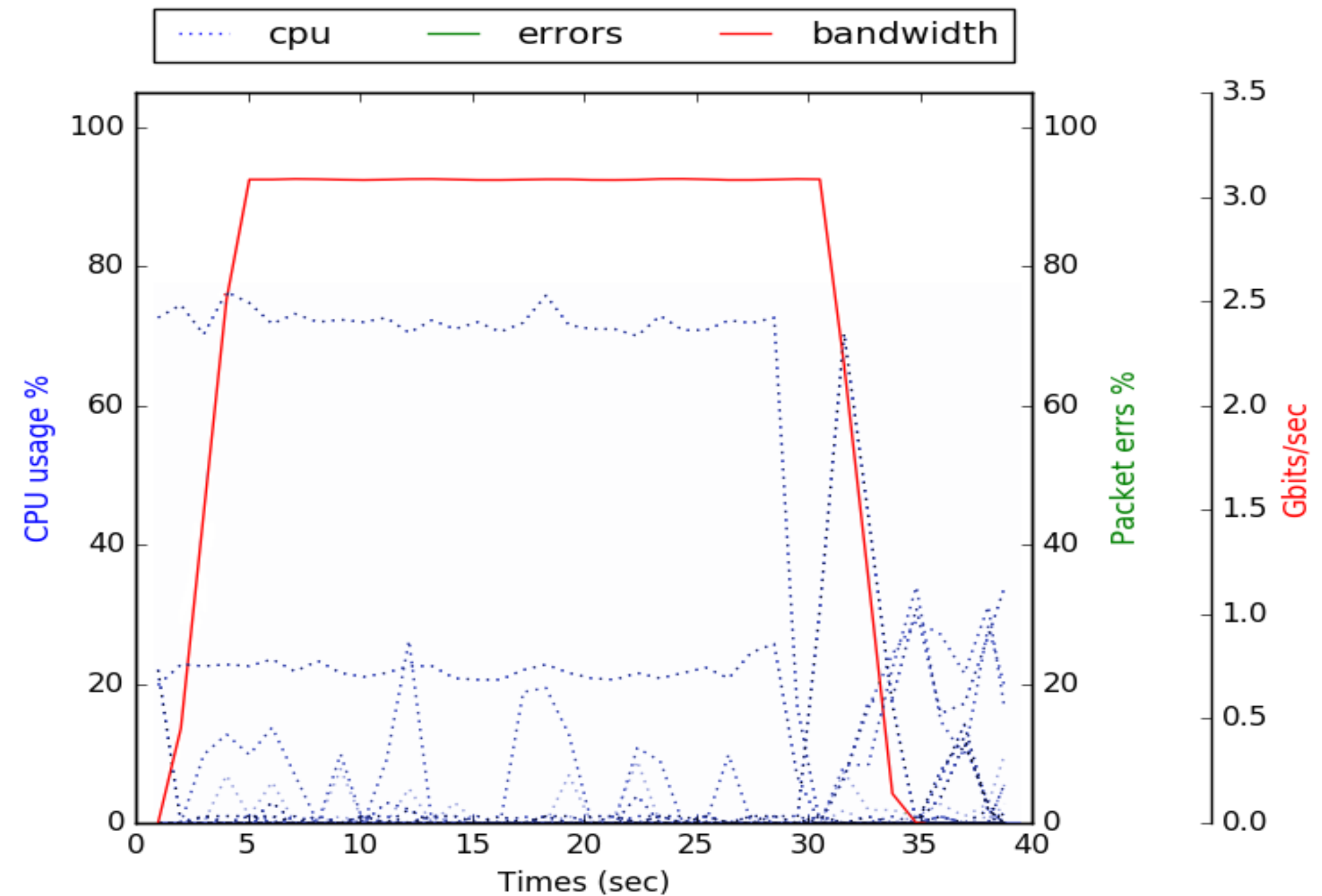
- Our work merged into FFmpeg on **march 31st 2017**



Performance



- SMPTE 2110 Audio/Video receiver
- **No packet loss**
- **Less than 80% for socket reader thread**



What is next

- Synchronization over PTP
- Handling of several streams
 - IRQ model
 - Busy polling
- Study latency
- SMPTE 2110 sender

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Thanks!

Eloi Bail

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