

Subtitling the Chaos Communication Congress: An Experience Report

Maximilian Marx

Knowledge-Based Systems Group, TU Dresden

Wikimania 2019

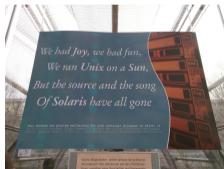
@c3subtitles

<https://c3subtitles.de>

<irc://hackint.org/#subtitles>

Chaos Communication Congress (Q516804)

- ▶ annual “hacker” gathering, between Christmas & New Year’s Eve
- ▶ started in 1984 (of course)
- ▶ Hamburg, Berlin, now: Leipzig (17,000 visitors)
- ▶ lectures, workshops, art, and more
- ▶ custom DECT/GSM/UMTS/ethernet networks
- ▶ mostly self-organised, volunteer (“angel”)-based



Realtime captions

- ▶ **Goal:** Provide captions for people in the room
- ▶ ... with minimal delay
- ▶ ... while the speaker is speaking

Realtime captions

- ▶ **Goal:** Provide captions for people in the room
- ▶ ... with minimal delay
- ▶ ... while the speaker is speaking
- ▶ **Problem:** fast speakers reach 200 Words / 1200 Strokes per Minute (WPM/SPM)
- ▶ ↪ Speech is 3–4 times faster than typing

Realtime captions

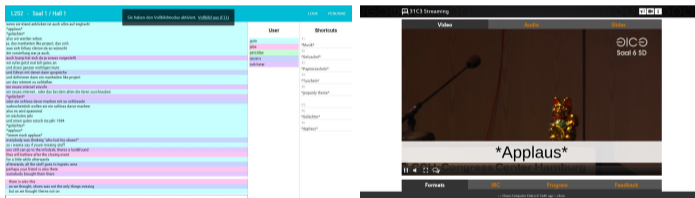
- ▶ **Goal:** Provide captions for people in the room
- ▶ ... with minimal delay
- ▶ ... while the speaker is speaking
- ▶ **Problem:** fast speakers reach 200 Words / 1200 Strokes per Minute (WPM/SPM)
- ▶ ~→ Speech is 3–4 times faster than typing
- ▶ Broadcasting uses **respeaking** (i.e., speech recognition)
- ▶ ~→ works only for clearly-defined vocabularies

Realtime captions

- ▶ **Goal:** Provide captions for people in the room
- ▶ ... with minimal delay
- ▶ ... while the speaker is speaking
- ▶ **Problem:** fast speakers reach 200 Words / 1200 Strokes per Minute (WPM/SPM)
- ▶ ↪ Speech is 3–4 times faster than typing
- ▶ Broadcasting uses **respeaking** (i.e., speech recognition)
- ▶ ↪ works only for clearly-defined vocabularies
- ▶ Court reporting uses **stenography**: chorded keyboards allow for 300 WPM
- ▶ commercial captioning providers for tech conferences exist! (e.g., @stenoknight)
- ▶ ... but only for English

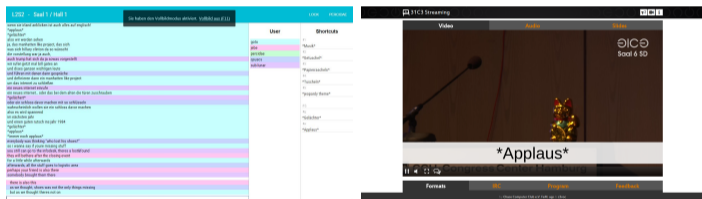
Realtime captions: Our solution

- ▶ If one typist is too slow ...
- ▶ ... just use four



Realtime captions: Our solution

- ▶ If one typist is too slow ...
- ▶ ... just use four



- ▶ L2S2 (<https://github.com/c3subtitles/L2S2>): etherpad-like captioning interface
- ▶ requires incredible coordination among typists
- ▶ ⇔ extremely tiring; need lots of angels; mistakes will happen

Offline Subtitles

- ▶ **Goal:** High-quality captions for recorded video material
- ▶ ↪ can be translated into different languages
- ▶ ↪ can make video material **searchable**
- ▶ Since 2017 (first year in Leipzig), we have focused exclusively on offline subtitles

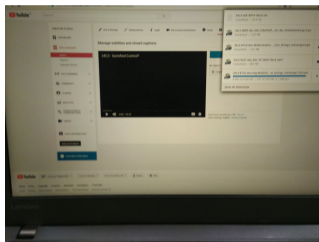
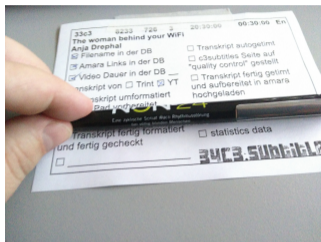
Offline Subtitles

- ▶ **Goal:** High-quality captions for recorded video material
- ▶ ↪ can be translated into different languages
- ▶ ↪ can make video material **searchable**
- ▶ Since 2017 (first year in Leipzig), we have focused exclusively on offline subtitles

Workflow:

- ▶ Generate a rough transcript using speech recognition software (Youtube, Trint, ...)
- ▶ Angels turn that into a proper transcript
- ▶ Align transcript & audio using Youtube
- ▶ Angels do “quality control”: fix spelling & correct alignment on <https://amara.org>
- ▶ Export subtitles as SRT to <https://mirror.selfnet.de/c3subtitles/congress/>

Offline Subtitles: Organisation



- ▶ every talk gets a unique token
- ▶ whoever works on a talk acquires the token
- ▶ “free” talks go back on the board
- ▶ after congress, we track progress on <https://c3subtitles.de>

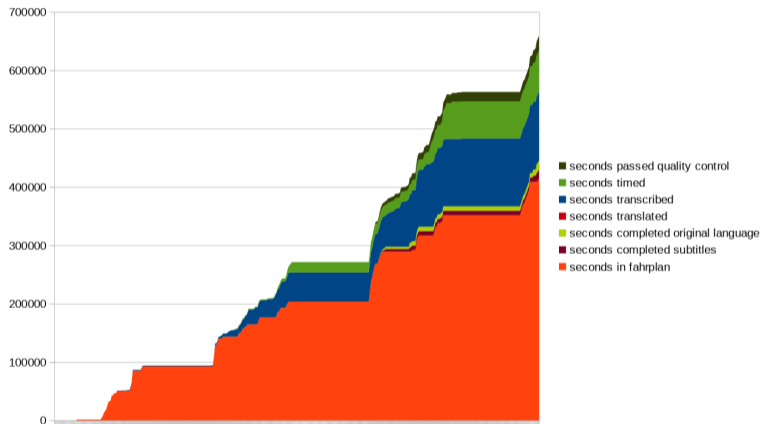
Statistics from the 35C3 Infrastructure Review

During 35C3

- ▶ 106 angels
- ▶ 381 hours worked
- ▶ 79 hours material
- ▶ 16 releases

In progress

- ▶ 49 hours transcribed
- ▶ 27 hours aligned
- ▶ 17 hours controlled



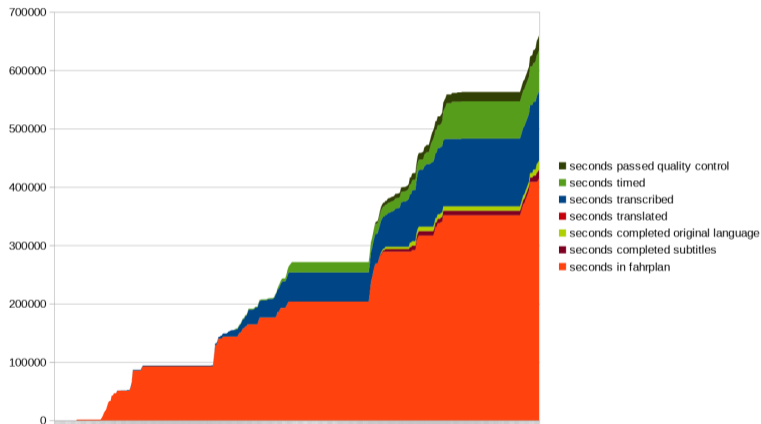
Statistics from the 35C3 Infrastructure Review

During 35C3

- ▶ 106 angels
- ▶ 381 hours worked
- ▶ 79 hours material
- ▶ 16 releases

In progress

- ▶ 49 hours transcribed
- ▶ 27 hours aligned
- ▶ 17 hours controlled



↪ You too can help on <https://c3subtitles.de> & <https://github.com/c3subtitles>