

## Twitter Thread by [Jared Naude @ rC3](#) ■

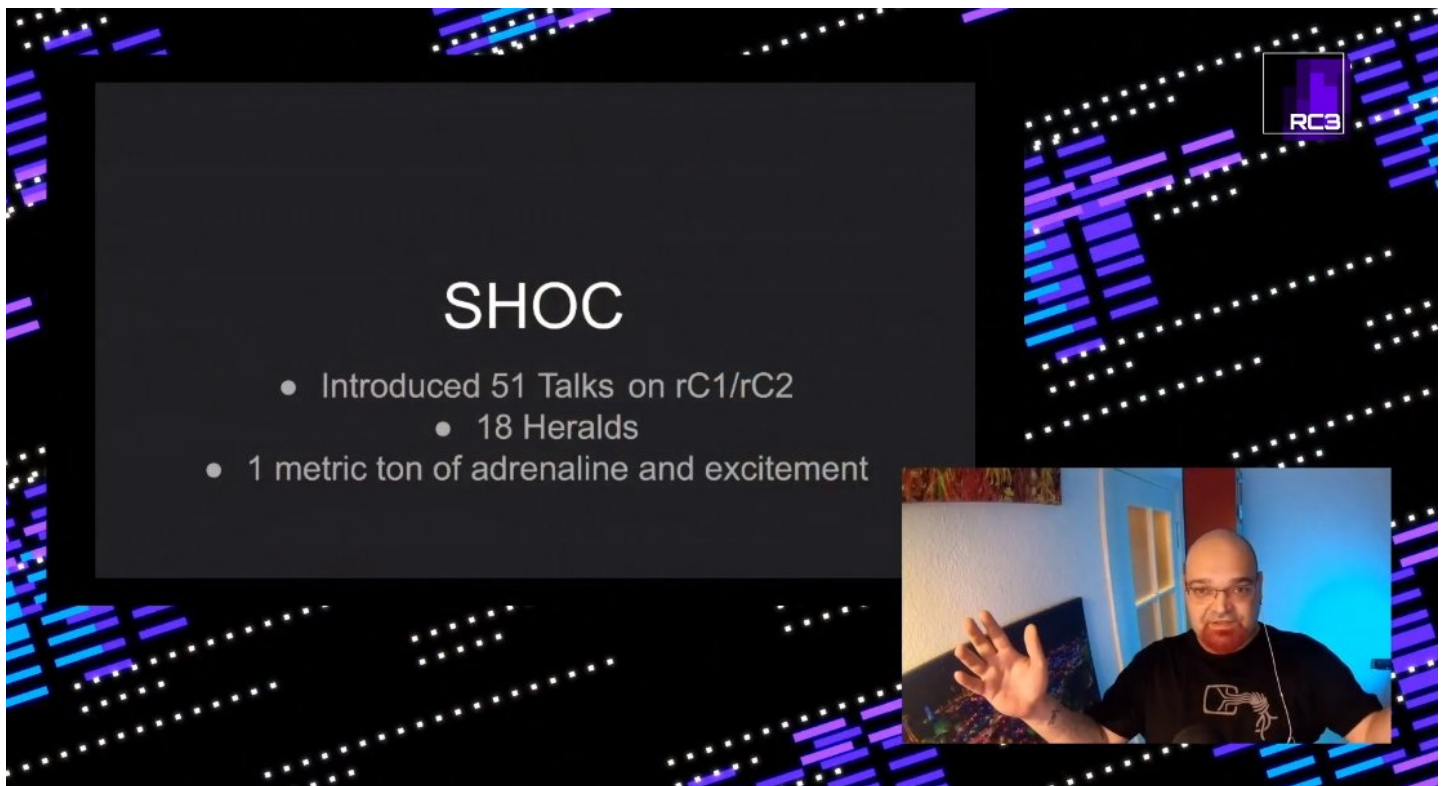


**Jared Naude @ rC3** ■

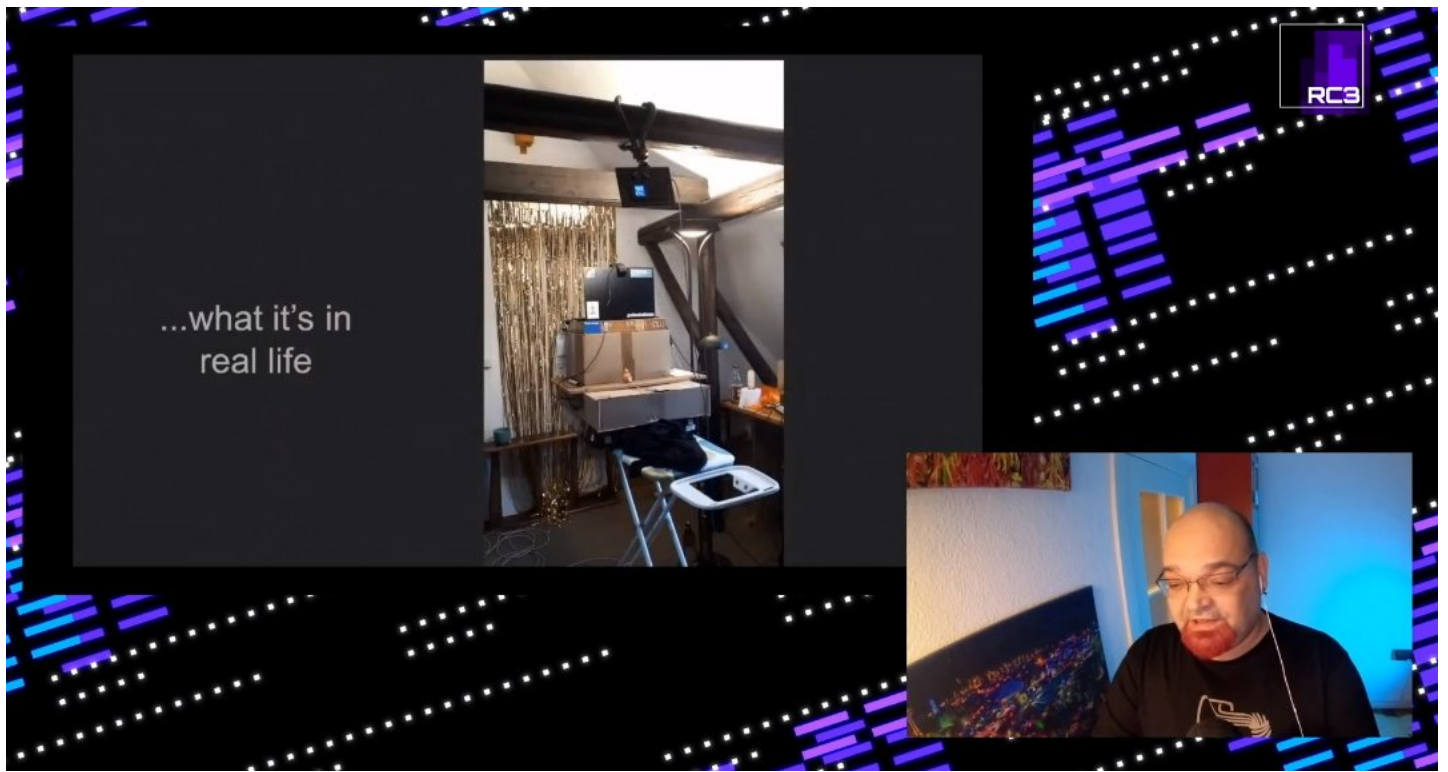
[@JaredNaude](#)



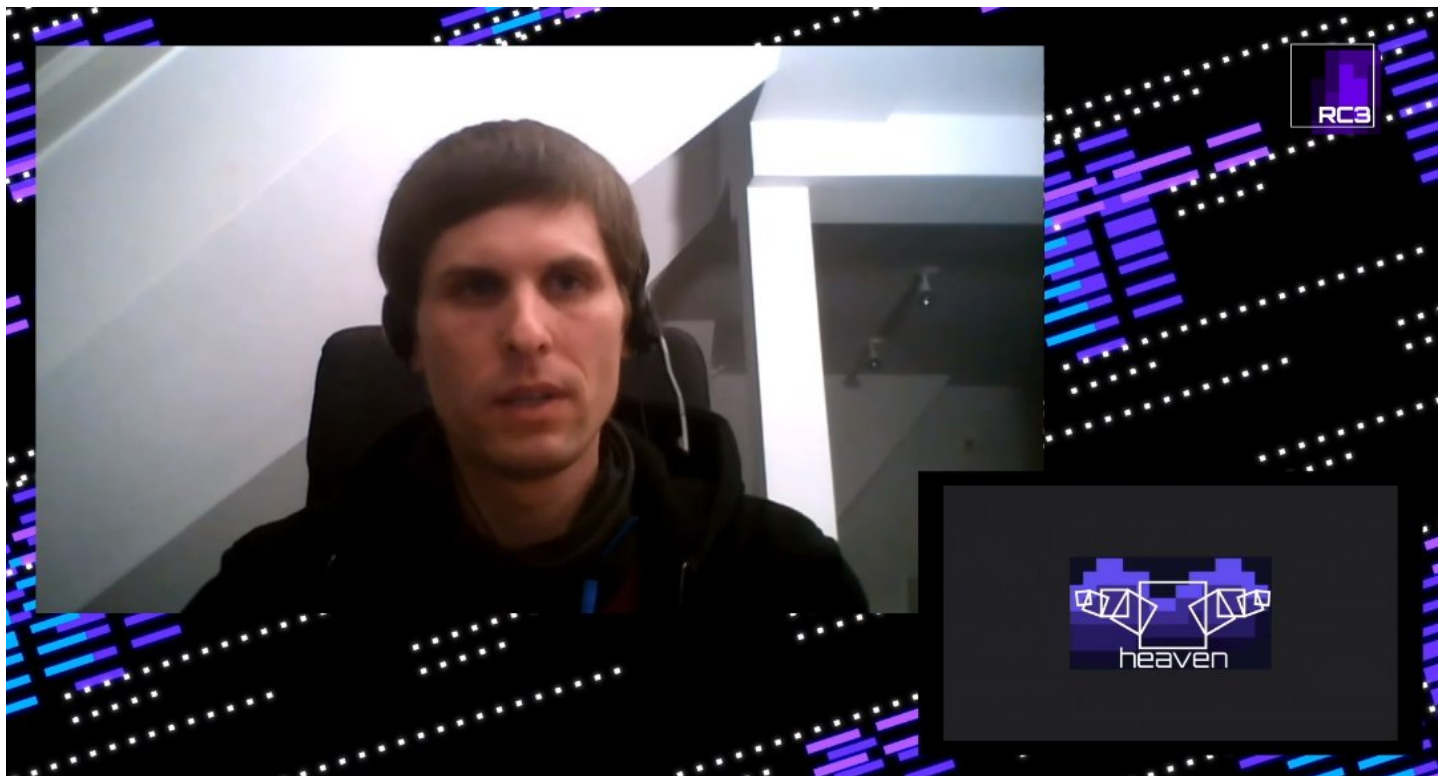
### Infrastructure review #rc3



There were only 18 heralds for all the talks. It was really hard to pull off, this conference also started a news show. #rc3



Next is the heaven team. 1487 total angels volunteered of which 710 arrived. 76 weeks worth of work hours were done by the angels. They prepared a few goodies for the RC3 world. Badges were given to show angels. Tried to keep traditions from the conference on RC3 world. #rc3



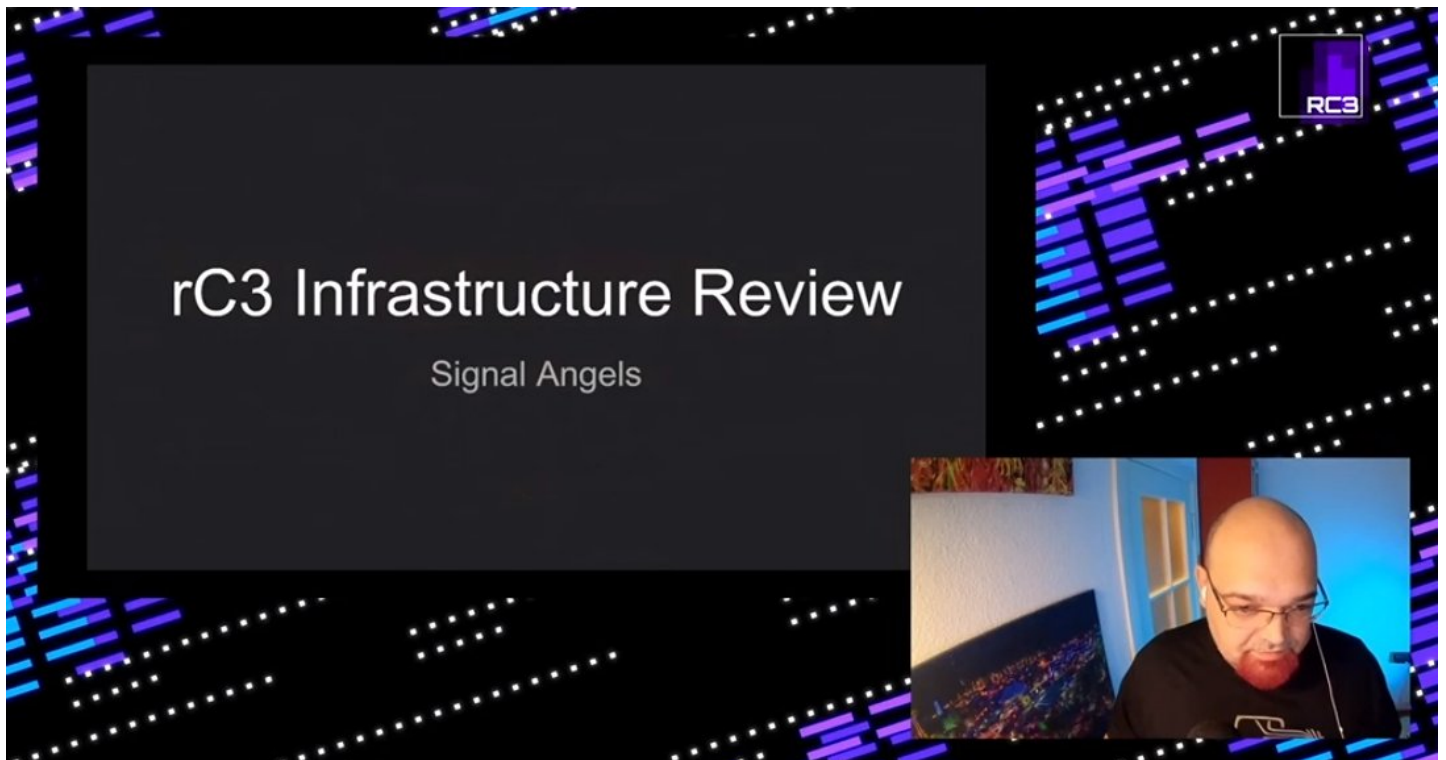
Huge thanks to all the angels who volunteered. This conference would not be possible with the help of everyone. #rc3



Our annual working statistics

- Last query: 2020-12-30 13:37 UTC+1
- Angel statistics
  - 1487 total, 710 arrived, 298 with shifts
  - Recorded work done: 17,75 weeks
- Badge achievements
  - Badge "Found Expired Extinguisher" 232
  - Badge "Extinguish Fire In Heaven" 125

Next team is the signal angels, this is the first time that people had to do remote Q&A. The procedure was quite different to the in person event. There were 157 shifts filled by 61 angels. There were 5 unfilled shifts. #rc3



rC3 Infrastructure Review

Signal Angels

A few things went wrong, some questions were long and need to split apart. Formatted questions were also a challenge. There were on average of 9.94 questions per talk. #rc3

The slide titled "Statistics" contains the following information:

- Used a Python script to download all pad content
- Read pad content and count lines
- Remove size of static header from line count
- $n\_pads=179$ ,  $n\_lines\_without\_header=1780$   
⇒ 9.94 "Questions"/Talk

The video feed shows a man with a beard and headphones in a room with shelves and boxes.

The next team is the line producers which handles the communication between everyone that handles the production of the talk. This includes the people behind the cameras, technical side and the speakers themselves. #rc3

The slide titled "Line Producers Aufnahmeleitung" features a circular graphic with the letters "H O V I S I O N" around the text "Line Producers Aufnahmeleitung". The video feed shows a man with headphones and a black t-shirt with an "RC3" logo, sitting in front of a white door and a potted plant.

There were 25 studios (pre-recording and live). 19 live broadcast channels including main streams and assemblies. Over 350 talks and performances. Events in main channels produced by a studio. #rc3

## Production Setup

- 25 studios (pre-recording and live)
- 19 live broadcast channels
  - Talks: rc1&rc2, Bitwäscherei (CH), c-base, Chaosstudio Hamburg, ChaosTrawler, ChaosZonne TV, Chaos-West TV, franconian.net, about:future, KreaturWorks, oio, R3S, Restrealität, WikipakaWG, xHain
  - Lounge & Ambient
  - Sendezentrum
  - re-runs of the best talks from previous years
  - Infobeamer
- Over 350 talks and performances overall
- Events in main channels each produced by a studio



There were 53 talks for the main channels. 18 of them were pre-recorded, 3 live in a studio session 32 live via the internet. The team prepared 63 speakers and they coordinated production between the master control room and 12 live studios. #rc3

## Facts and Figures

- 53 talks in the main channels
  - 18 pre-recorded
  - 3 live in a studio location
  - 32 live via the Internet
  - Heralds mostly remote, but some local in the studio
- Prepared 63 speakers (thank you Home Setup angels!)
- Coordinated production between Master Control Room and 12 live studios



2020 was the year of remote talks, there were 2 prior events to learn from. 2 new CDNs were added which brings the total to 7 CDNs with a total bandwidth of ~80GB. Added 2 transcoder machines. Various spaces were able to enhance their setups with public funding. #rc3

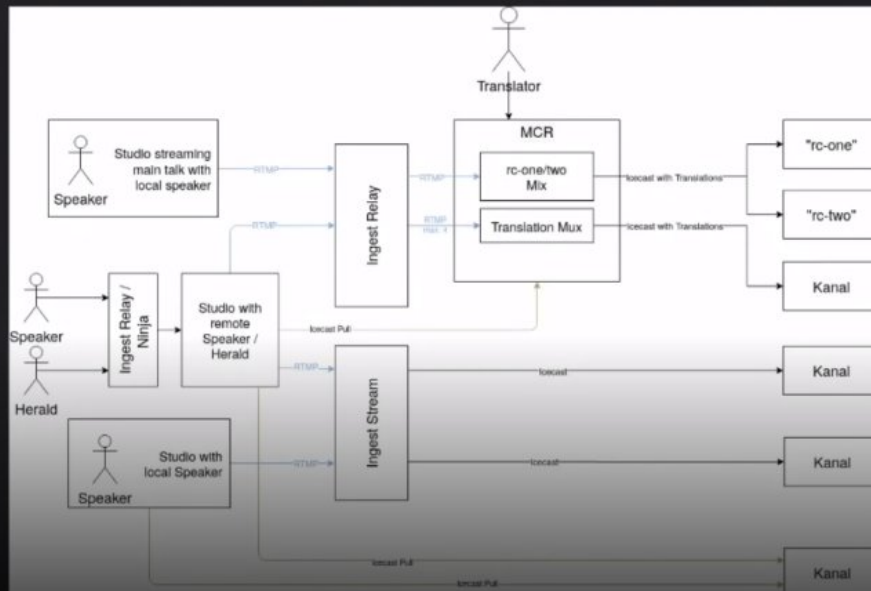
## 2020 - Year of distributed conferences?

- We had two DiVOCs and the FrOSCon to learn about producing remote talks
- We learned a lot of stuff on organisation, how to record BBB and Jitsi...
- There have been various other events for streaming ... but this was business as usual
- We extended the streaming CDN with two new location (7 in total) with ~80Gb
- We added two media.ccc.de mirrors (4 ccc, 7 others) and started to distribute the frontend
- Two new transcoder machines
- Erfas / Spaces enhanced their setups with public funding
- 10 Erfas / Spaces with own productions on media \o/
- But one Question Remains: Will it scale?

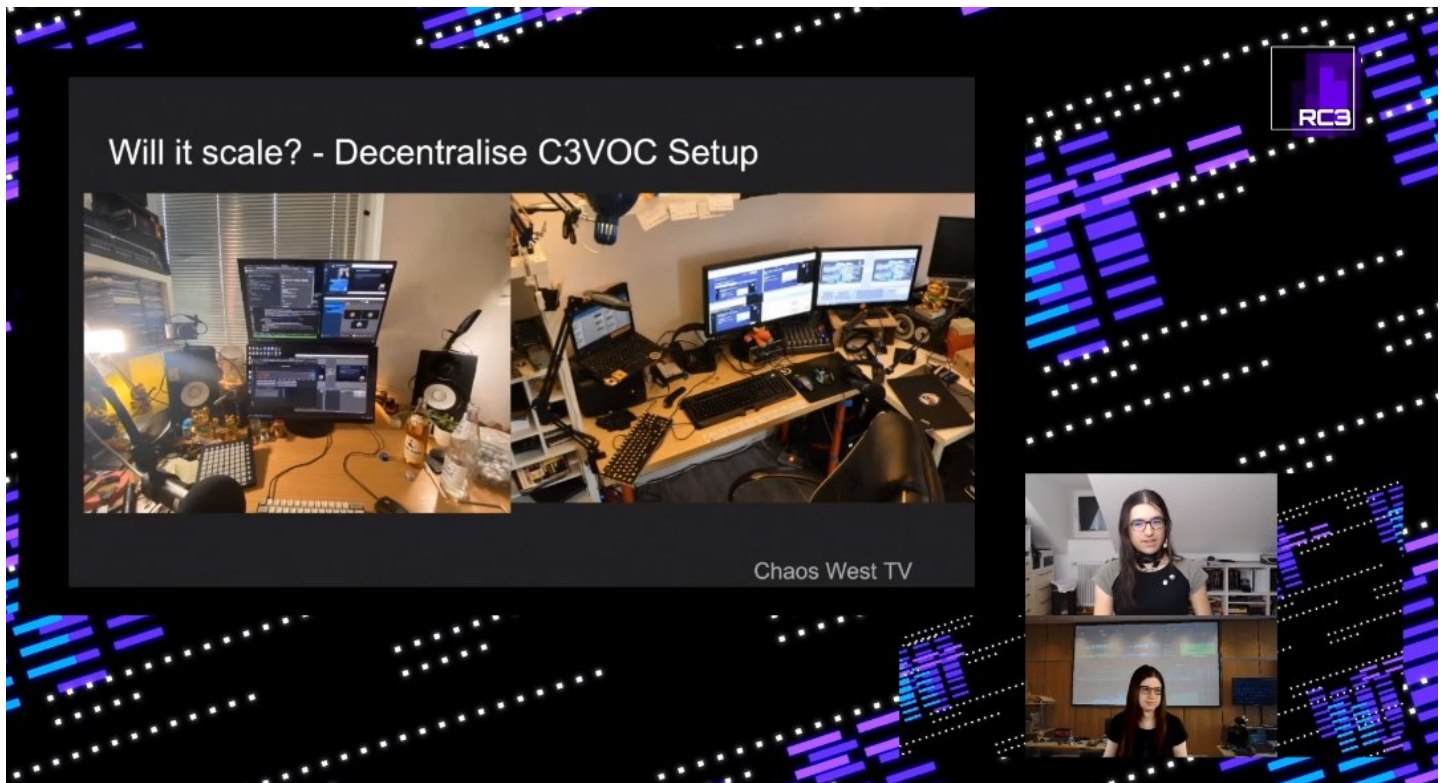


Below is the diagrams of the various input and processing channels. The various communication paths caused a number of issues due to the complexity. #rc3

## Will it scale? - Decentralise C3VOC Setup



Some of the remote setups that were used as part of the broadcast for the various streams. #rc3



Some more remote setups that were used as part of the broadcast for the various streams. #rc3



Then the issues started rolling in. A lot of both hardware and software investigations had to be done. There were many malformed packets that causes issues. #rc3

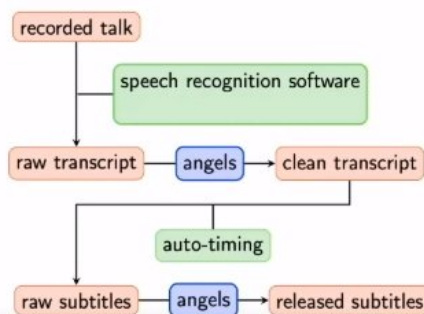
## ... and then there was some minor issue

- Suddenly a lot of connections - "maybe we should look at our cache"
- Then A lot of more connections - "the people are watching our streams"
- Moments later - "well something did not scale well. There is an issue"



Next up is the c3 Lingo team. 36 volunteers translated 138 events which resulted 106 hours of translated video. 5 talks were translated to French, 3 talks were translated to Portuguese. There were quite a number of issues with audio and timing between multiple translators. #rc3

## What we done



- ▶ speech recognition generates transcript
- ▶ angels correct transcript
- ▶ auto-timing aligns transcript with audio
- ▶ angels review subtitles for quality
- ▶ subtitle is released

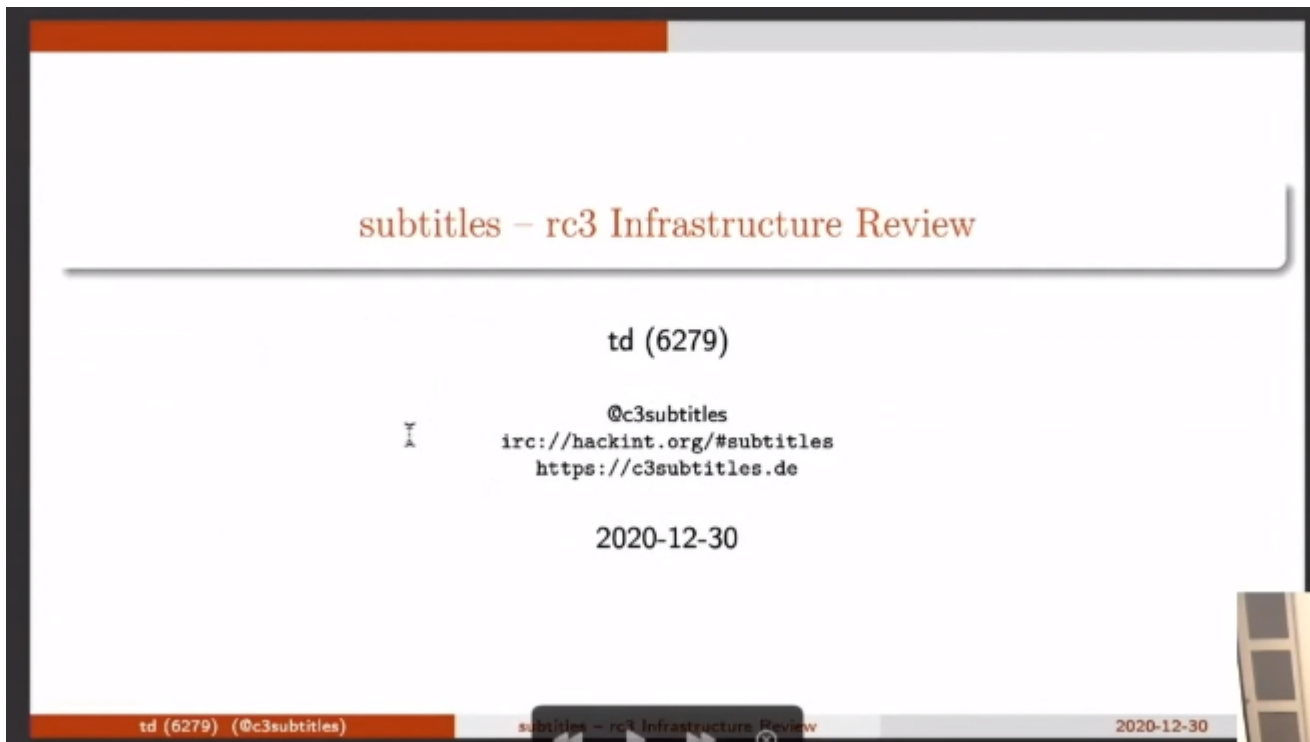
td (6279) (@c3subtitles)

subtitles - rc3 Infrastructure Review

2020-12-30



The next team is the subtitles team. The team uses speech recognition software to get a raw version of the subtitles after which angels correct mistakes and do quality control. 68 angels worked 4 shifts on average. They worked 382 hours for 147 hours of content. #rc3



Next is the Phone Operation Center (POC). 1195 SIP extensions, There were 21K calls (in the previous conference, it was 300K calls). Eventphone setup a Decentralized DECT infrastructure (EPDDI) and there were a number of phones that were used. #rc3



The RC3 world contained a phone that you could virtually use to call a SIP number. Someone made a flamethrower that could be controlled by a DECT Handset - C3 Fire. The team also made pictures available over SSTV on DECT, where you could get an image from an audio waveform. #rc3

## Misc

1. Public Phone
2. 3473 - Flamethrower



Next is GSM team that had a setup across Germany, Berlin and one in Mexico. #rc3



# GSM

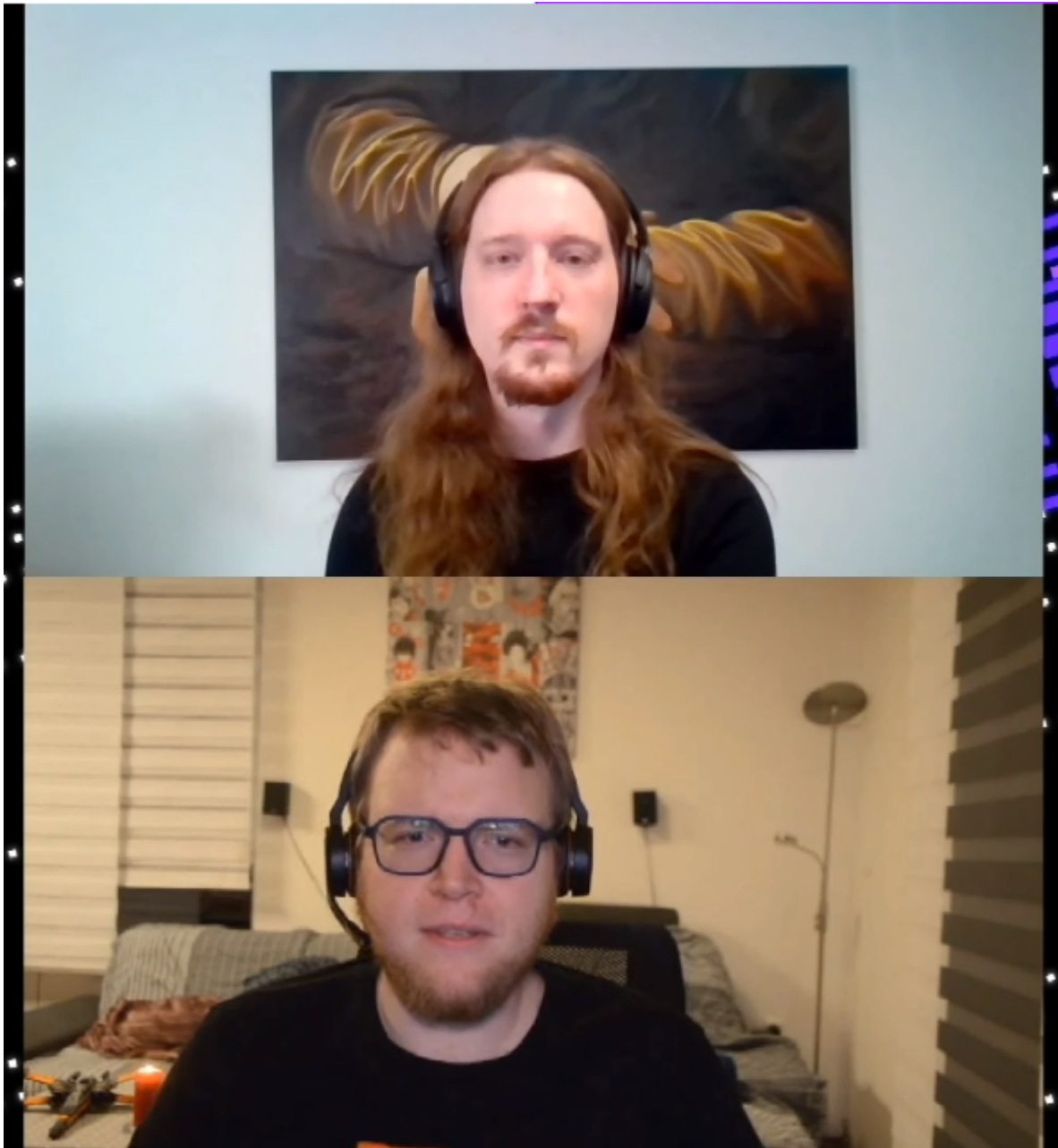
Next is the Haecksen team which used over 7 million pixels to display the world with hundreds of git commits. 132 people received badges for testing the virtual swimming pool. They had 133 people with zero lag. Over 50 goodie bags with masks and microcontrollers were made. #rc3



The ChaosPat team set up a number of mentor and mentee sessions in the virtual RC3 world. #rc3



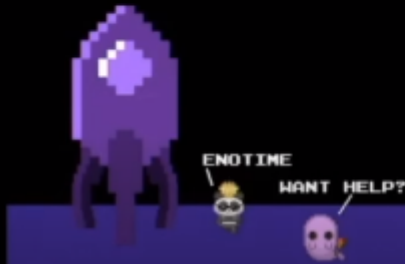
Next is the adventure world team that built the RC3 world. Work started in November, There were several upstream merge issues. Some of the issues with instance jumps were fixed on day 2. Over 400 commits for the initial world deployment. #rc3



A faulted loop caused a lot of logs to be generated. This was fixed on day -5. On day -1, the deployer was finally working. A bug in the application causes people to not see each other. #rc3

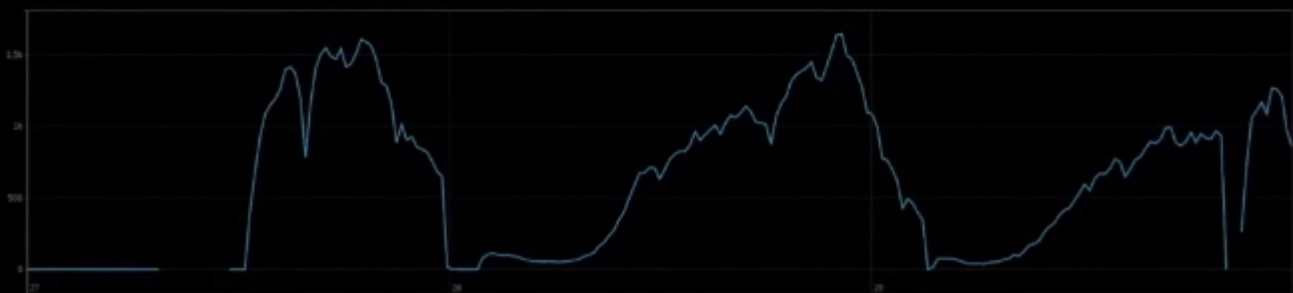
## Preparations: deployment

NOV 22: First commit to the deployer  
DEC 08: First working instance  
DAY -5: Deployer still fork bombs itself after 5 minutes  
DAY -4: Somebody finally noticed  
DAY -1, ~3AM: Deployer is finally working  
DAY 1, 9:45: First login to production  
DAY 1, 13:00: First deployment  
DAY 1, 16:00: Wait, why is everybody on one instance?



The most popular place was the lobby followed by the hardware hacking area. The most people in RC3 world at once was 1642. Over 2 millions tiles were used to create 628 maps which represented over 203 assemblies. #rc3

## Population



Most people at once: 1642      Total assemblies: 203  
Total tiles on all layers: 2567965      Total maps: 628  
Server-breaking-number-of-maps award: CERT

Lots of people worked really hard to get these maps to where they are. Thank you! 405 servers were deleted by a typo. Automation for the win! Huge thanks to Hetzner for sponsoring the hardware that run the RC3 world. #rc3

Hardware sponsored by

# HETZNER



Thanks to the RC3 lounge artists from many countries from around the world. #rc3

