

# Insights on VIP webcast events: last COVID DG's talk use case

By

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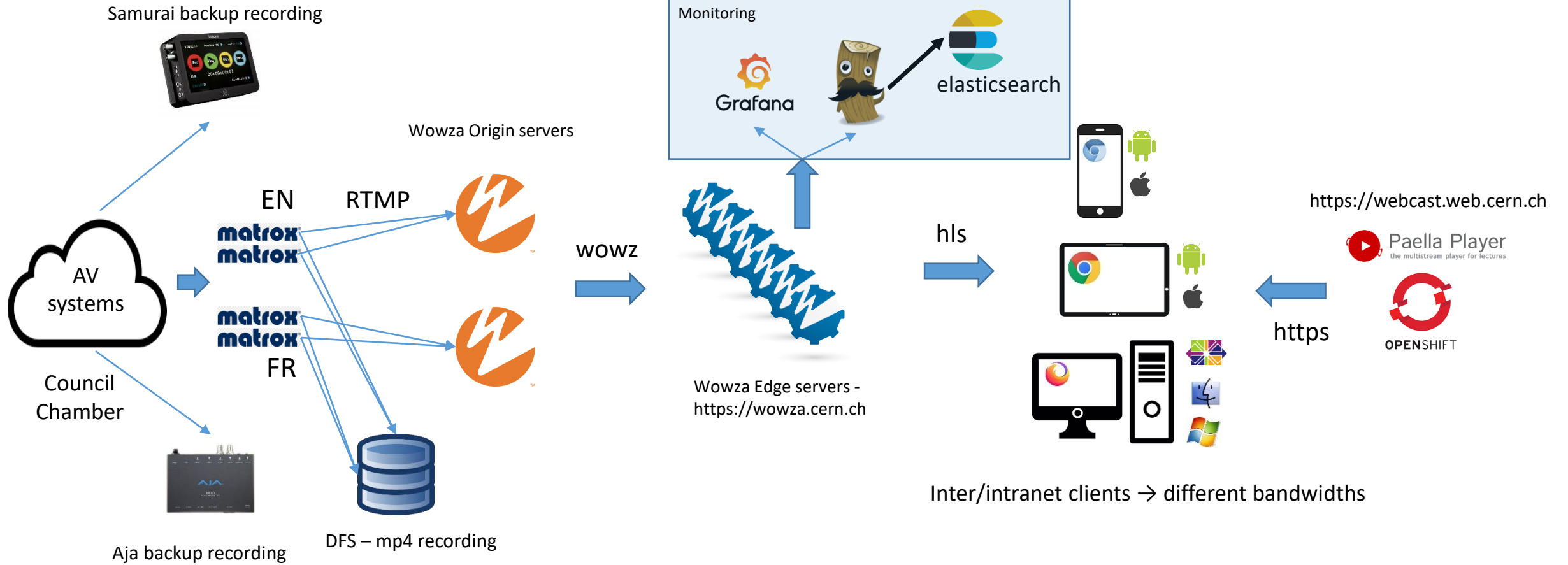
# Agenda

- General view of VIP events and our architecture
- New Webcast website
- Bits affecting the server infrastructure
- Conclusions

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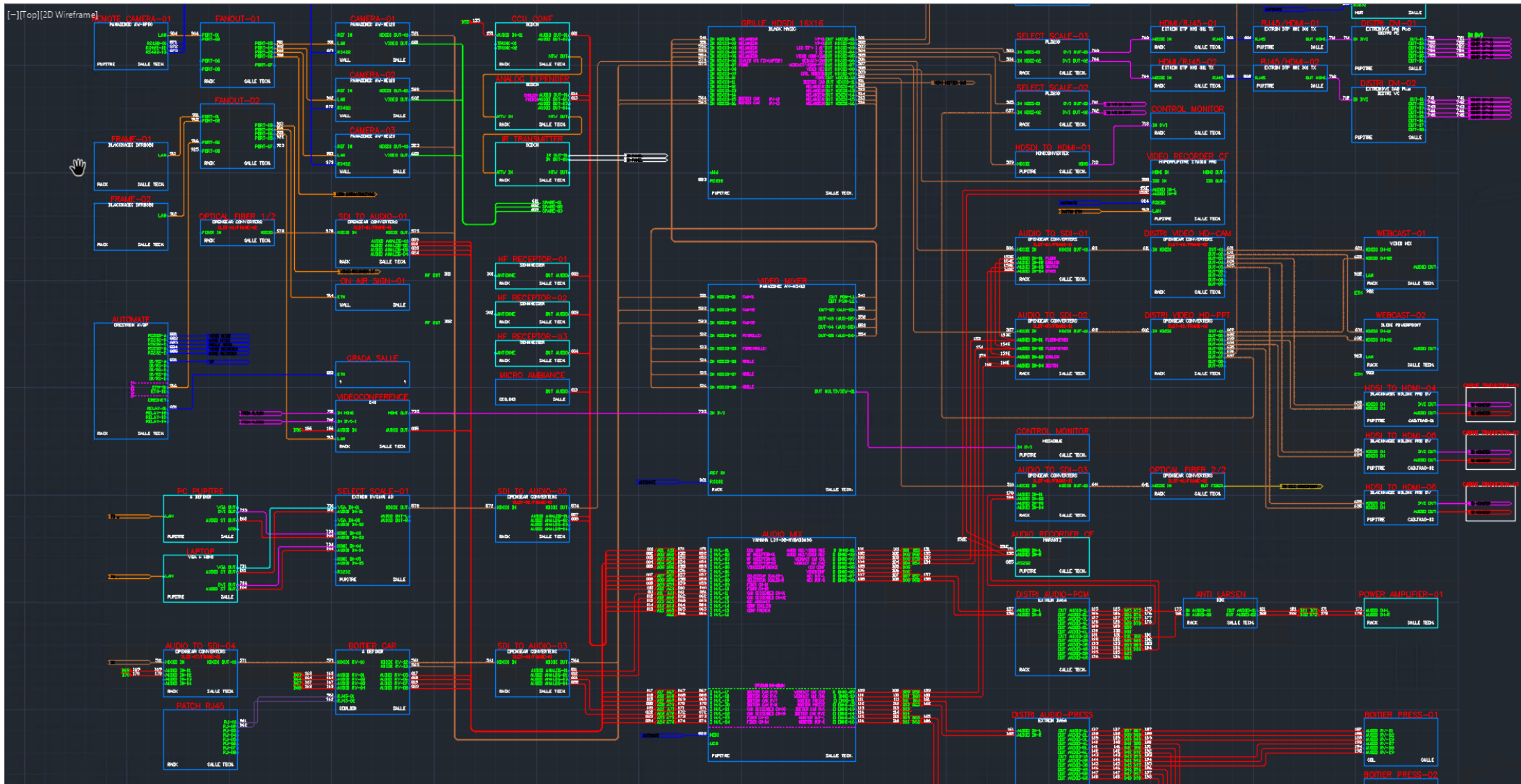
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# Architecture overview



# Audio Visual (AV) black magic

3 people operating it



To  
Webcast  
service

→ camera

→ slides

Thanks to  
[Radoslaw Soroka](#)  
in charge of AV in  
Conference  
rooms.

- Converts signal from SDI to HDMI
- Upscale video signal 1080i to 1080p & 50 fps
- Embeds audio
- Backup recording

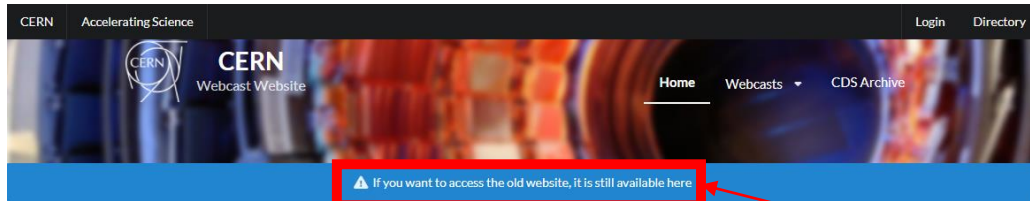
# How we proceed with VIP events at a glance

- Initial discussions that start with a SNOW or direct email to webcast 2<sup>nd</sup> or 3<sup>rd</sup> level support
- Codimd to follow up/coordinate actions: <http://cern.ch/go/RHV8>
  - AV colleagues: equipment setup e.g. micros, mixers, local recording devices, encoders, codec (if video conference also required)
  - Webcast infrastructure: encoders configuration, server setup: origin & edges, webcast site configuration. All this **doubles** if **translation is required**.
- Usual preparation workflow includes a rehearsal with the actual players (didn't happen for this talk)
  - Technical rehearsal done by Webcast and AV teams
  - Time sequence to live event:
    - 30 min streaming: final tests/fine tuning
    - 10 min before scheduled time → **show time!!**

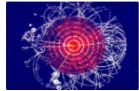
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# New website user's view



## UPCOMING WEBCASTS



### The CERN Next Ion Medical Machine Study: towards a new generation of accelerators for cancer therapy

by Maurizio Vretenar

🕒 October 19, 2020, 2:00 PM GMT+2 📅 Add to calendar

This Seminar will be webcast: <https://webcast.web.cern.ch/event/1956260>. Places in the room will be very limited. We will use zoom for questions after the seminar:&nbsp;

[https://cern.zoom.us/j/93358147869pwd=aTRvbU9xZ0lJWU9lcmVamNBWklwdz09&nbsp;password:NIMMS&nbsp;Please check this page for updates. During the seminar, in case of technical issues, we will&nbsp;post information here....](https://cern.zoom.us/j/93358147869pwd=aTRvbU9xZ0lJWU9lcmVamNBWklwdz09&nbsp;password:NIMMS&nbsp;Please%20check%20this%20page%20for%20updates.%20During%20the%20seminar,%20in%20case%20of%20technical%20issues,%20we%20will%20post%20information%20here....)



[More Information >](#)



### ALICE results on charmonium production in pp and heavy-ion collisions

by Ionut Cristian Arsene

🕒 October 20, 2020, 11:00 AM GMT+2 📅 Add to calendar

Ultrarelativistic nucleus-nucleus collisions lead to the creation of a long lived deconfined quark-gluon plasma phase (QGP), which is the object of intense studies at both the LHC and lower energy experiments. Inferring the properties of this hot and dense medium requires knowledge...



[More Information >](#)

- Big improvement in accessibility



Accessibility

- Fully develop in **React** to improve **mobile** functionality:

- 08/10/2020: **Old site** was **always accessible** where camera and slides were operational

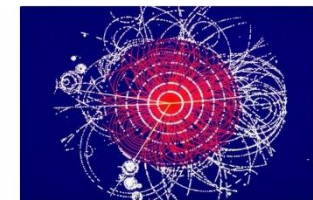
- Dual stream **tested** via VOD, single stream via Zoom/OBS webcasts.

- **Used by 3 Zoom production webcasts** before DG's talk

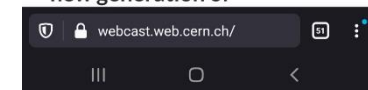
- Player is based on FOSS **Paella player** (new player was introduced 23<sup>rd</sup> April, it replaces commercial TheoPlayer)



## UPCOMING WEBCASTS



### The CERN Next Ion Medical Machine Study: towards a new generation of

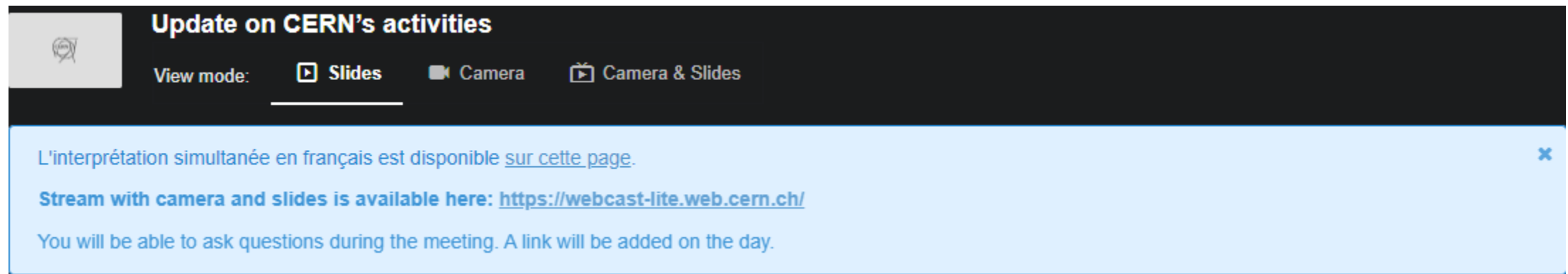


Android: Samsung S10



# Redundancy measures: webcast-lite and Old site

- Old webcast website was accessible as alternative access point (see previous slide)
- **webcast-lite** was also accessible for both EN and FR events



- Site was developed on different infrastructure than Openshift:
  - Based on Webservices – DFS site
- Webcast-lite was developed to address issues we had in the past with authentication, EOS access, etc.

# New website admin's preview enhancement

Home > Events > Upcoming > Edit: 636

## Go Live upcoming Event (#636)

**NEW Preview** Preview Save Save and Go Live

**Indico**

Indico ID: 1234  
Indico Category ID: 645

**Authorization**

Audience: No restriction  
Authorized users: [dropdown]  
Sharable:  Embeddable:  Visible:   
is\_protected:

**Details**

Title: Technical Board  
Speakers: Werner Witzeling  
Abstract: <A HREF=http://indico.cern.ch/conferenceDisplay.py?confid=a056563>Agenda</A>

**Date**

Timezone: Europe/Zurich  
Start date: 2006-03-08 18:30:00  
End date: 2006-03-08 21:15:00

Custom image: Choose File | No file chosen  
default\_img: /static-files/images/default/events/No\_restriction/mobel.jpg  
Select a default image  
use\_default\_img:

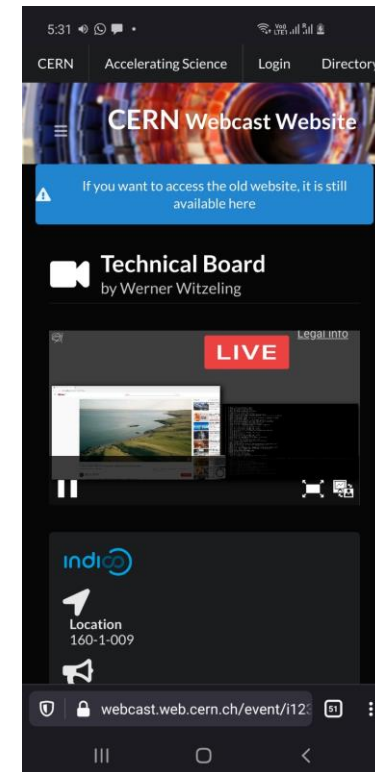
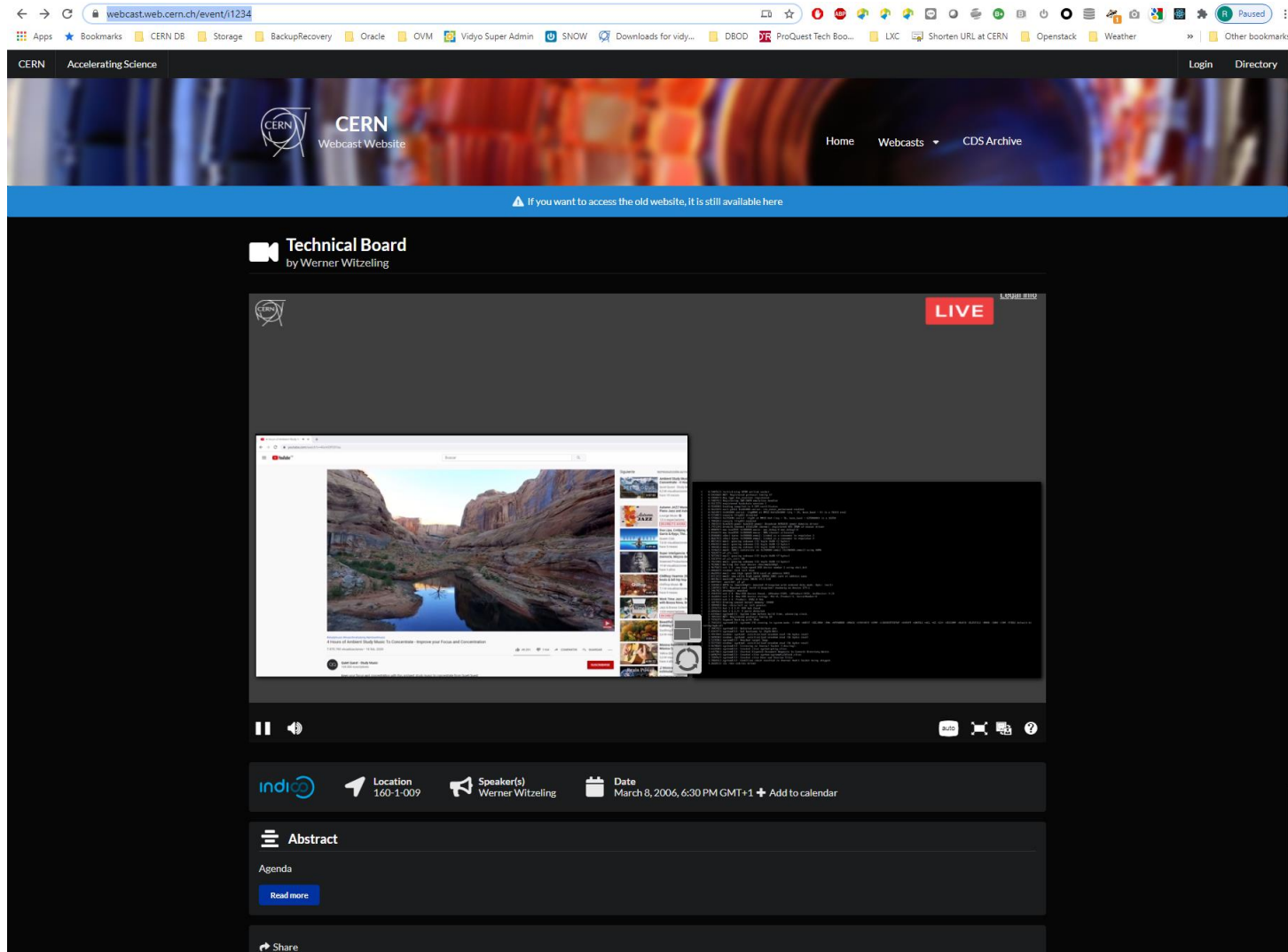
room: 160-1-009  
Link: https://indico.cern.ch/event/1234/  
Link Label:  
Display Message:  
Extra HTML:

- New preview added so testing actual webcast final view can be done while rehearsals, same as users one

<https://webcast-test.web.cern.ch/view/eyotrtwxzttmqesf/1234>

- Obfuscated link that implements a roadmap feature: <http://cern.ch/go/mmL9>

# New website user's view

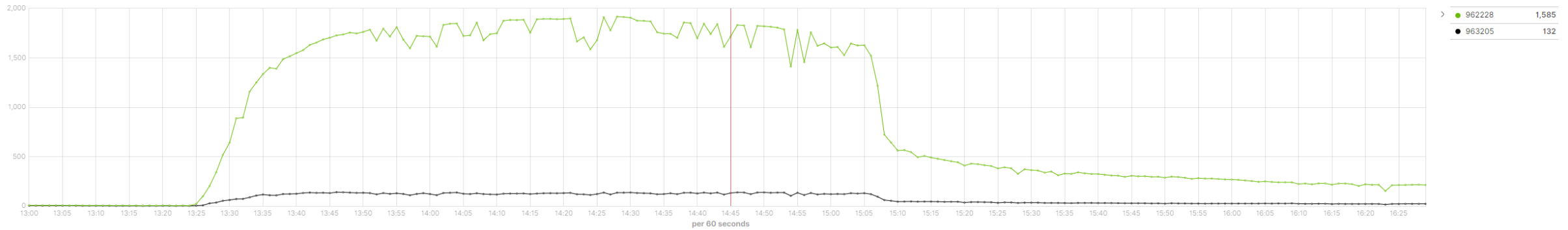


Android: Samsung S10

# HLS consumption DG talk – new monitoring

## Unique IP clients

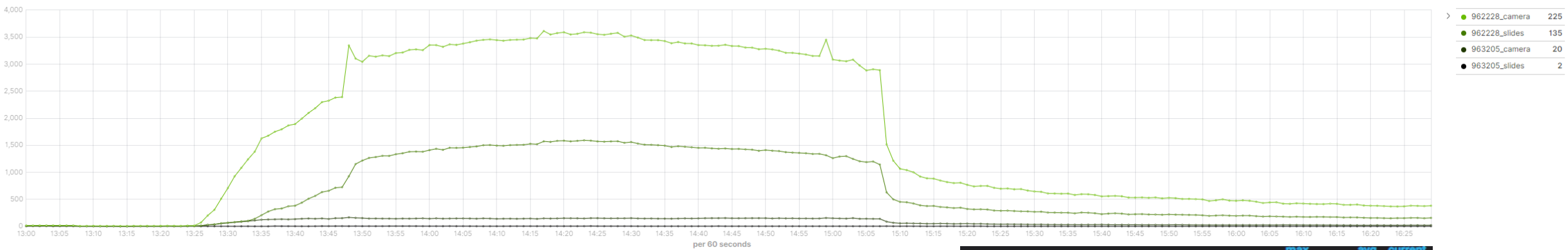
Webcast\_UniqueIP\_Connection\_perstream\_stacked\_prod



	max	avg	current
963205	140	113	12
962228	1.783 K	1.402 K	127

## Aggregated consumers, same client may be counted twice

WebcastWowzsession\_perstream\_stacked\_prod



	max	avg	current
962228_camera	2.420 K	1.648 K	533
962228_slides	1.446 K	980	335
963205_camera	162	127	51
963205_slides	6	3	3

Embeds audio

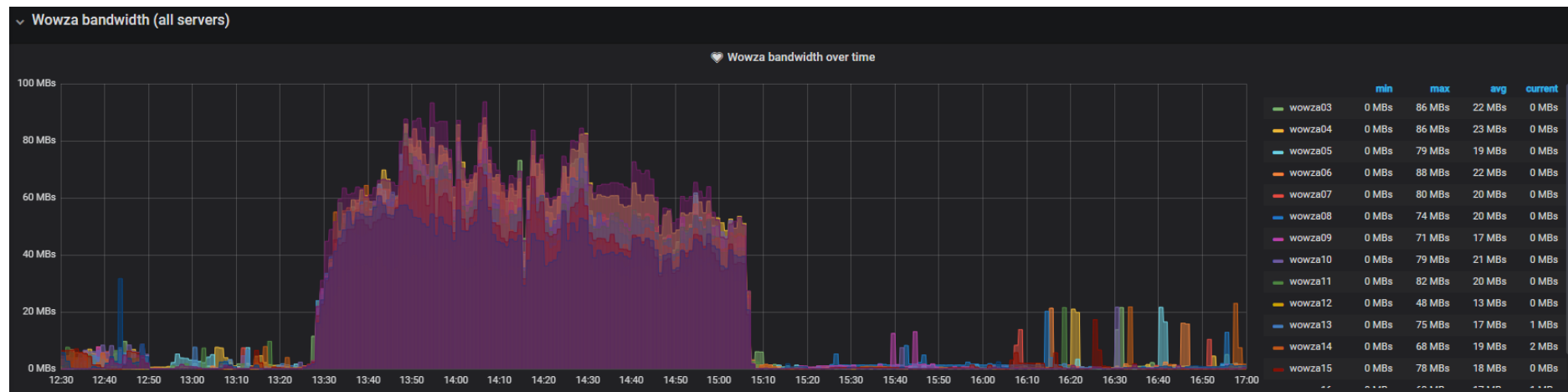
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# More changes done in prod effective for the DG Talk

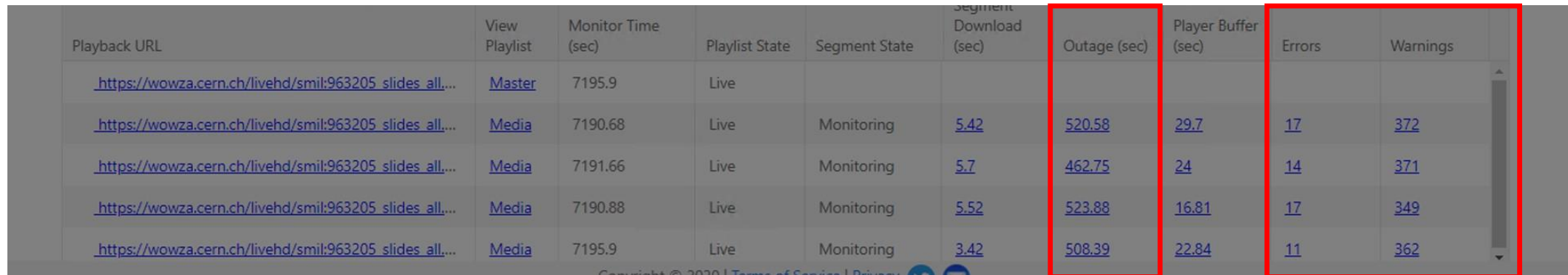
- Monitoring has been changed (old Drupal 7 interface is not anymore available): servers and events
  - Not anymore based on logs recollections from Wowza edge servers
    - Very error prone: Kerberos errors while copying logs to DFS
    - Code very old not adapted to new Wowza versions → lack of accuracy
  - Based on **SNMP** and supported **WOWZA** edge **endpoints** to query for stream consumption
  - Nowadays just **available** for **admin/2<sup>nd</sup> level supporters**

Measuring bandwidth saturation degree of our CDN



# HLS stream validation

- During technical test on 7<sup>th</sup> October (<https://hlsanalyzer.com/>) :



Playback URL	View Playlist	Monitor Time (sec)	Playlist State	Segment State	Segment Download (sec)	Outage (sec)	Player Buffer (sec)	Errors	Warnings
<a href="https://wowza.cern.ch/livehd/smil:963205_slides_all...">https://wowza.cern.ch/livehd/smil:963205_slides_all...</a>	<a href="#">Master</a>	7195.9	Live						
<a href="https://wowza.cern.ch/livehd/smil:963205_slides_all...">https://wowza.cern.ch/livehd/smil:963205_slides_all...</a>	<a href="#">Media</a>	7190.68	Live	Monitoring	<a href="#">5.42</a>	<a href="#">520.58</a>	<a href="#">29.7</a>	<a href="#">17</a>	<a href="#">372</a>
<a href="https://wowza.cern.ch/livehd/smil:963205_slides_all...">https://wowza.cern.ch/livehd/smil:963205_slides_all...</a>	<a href="#">Media</a>	7191.66	Live	Monitoring	<a href="#">5.7</a>	<a href="#">462.75</a>	<a href="#">24</a>	<a href="#">14</a>	<a href="#">371</a>
<a href="https://wowza.cern.ch/livehd/smil:963205_slides_all...">https://wowza.cern.ch/livehd/smil:963205_slides_all...</a>	<a href="#">Media</a>	7190.88	Live	Monitoring	<a href="#">5.52</a>	<a href="#">523.88</a>	<a href="#">16.81</a>	<a href="#">17</a>	<a href="#">349</a>
<a href="https://wowza.cern.ch/livehd/smil:963205_slides_all...">https://wowza.cern.ch/livehd/smil:963205_slides_all...</a>	<a href="#">Media</a>	7195.9	Live	Monitoring	<a href="#">3.42</a>	<a href="#">508.39</a>	<a href="#">22.84</a>	<a href="#">11</a>	<a href="#">362</a>

- Finally it led to a misconfiguration of one of the edges (recently installed): RQF1668871 + disabling ipv6
- Same difficulties to test new software developments apply to **debugging server** infrastructure. Here it's a **must** to have as **equal** as possible to **production environment**:
  - Checking whole chain: Wowza app on primary and secondary's, Matrox settings, etc.

# After the talk

- Wowza nDVR technology allows to replay a Webcast, right after the Webcast is over. It's a way to view the webcast till it's available at Indico/CDS.
  - It didn't work for this talk → a [Wowza support case](#) was open to research the reason
- Post-processed Video was available about a day after
  - EN: <https://indico.cern.ch/event/962228/>



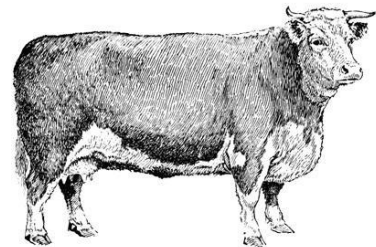
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# Conclusions

- **DG talk** was quite **successful** despite of the webcast site bug, with an average of 1.5k watchers
  - **Counter measures** were very **effective**
  - **Issues** on website/server side have been **addressed**
- **Testing** process is sometimes **tricky**
  - Specially when physical devices are involved, not easy to coordinate
  - Web platforms evolving (desktop & mobile) fast. New browser version may affect webcast site/player.
  - Misconfiguration of devices (AV or Webcast) is also a source of worries
    - Should be spotted during technical tests
- **Server side changes** were also **successfully validated** during COVID talk
  - High backlog on operations due to a very deficient transfer of information

*No comments, no documentation but 20 tickets*



The Guy Who  
Wrote This Is Gone

*It's running everywhere*