

Kultura video streaming ecosystem

Recommended choice for *Krajowy Magazyn Danych*,
PIONIER Consortium and other projects

Kultura video streaming ecosystem

- **Video player** (JavaScript, open source)
- **Video platform** (commercial)
 - Kultura Management Console,
 - Kultura Edge Servers,
 - other applications and integrations.

Kultura Player features



Most important features

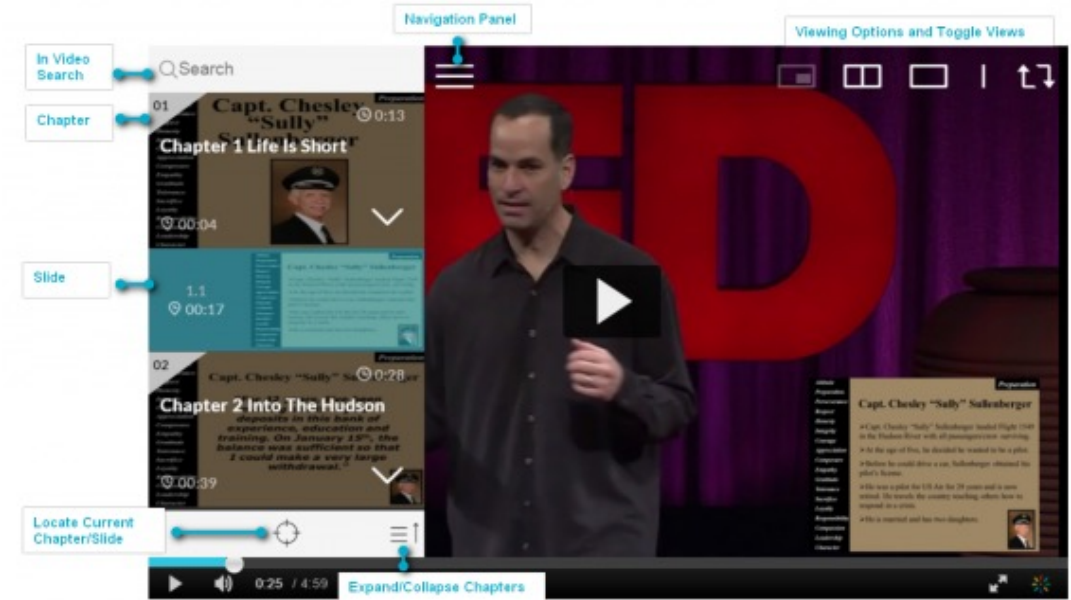
- **Modular** framework:
 - based on playkit-js library,
 - Includes HLS and DASH JS libraries,
- **Configurable** dynamic UX/UI via JSON parameter/values, including player controls, volume, icons, etc.
- **Rich functionality** with configuration options, adaptive bitrate, multiple audio, subtitles in WebVTT.

Why Kaltura player?

- Configuration, flexibility,
- Good API documentation,
- Works smoothly with live streams and VoDs produced by ffmpeg,
- Large community of users still in place, software still developed, project not dead.

Conclusion:

Kaltura Player is a good choice for a low-cost in-house developed and self-hosted video platforms based on WordPress.



Where Kaltura player?

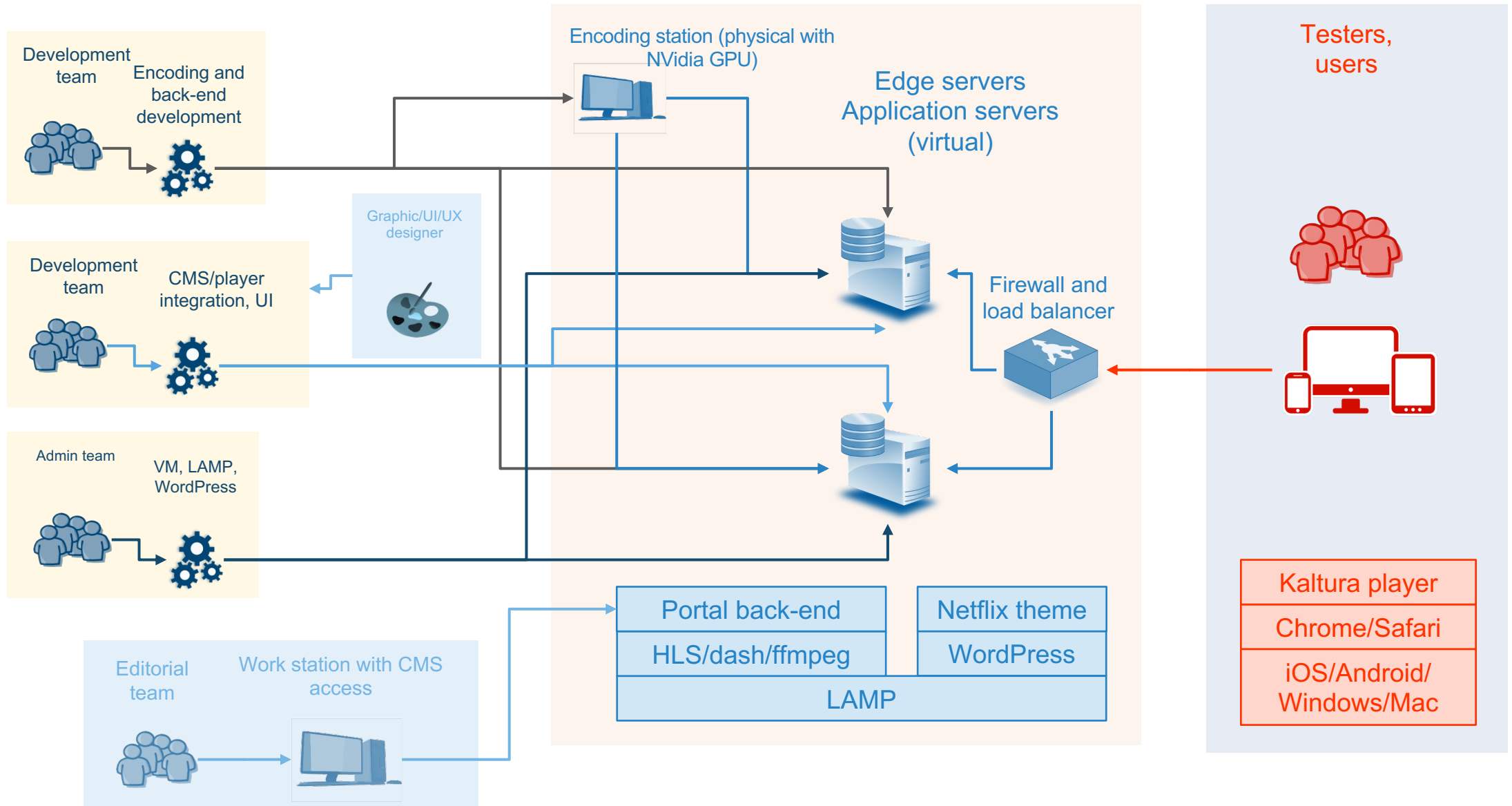
We found Kaltura Player is a good choice for:

- low-cost,
- in-house developed,
- self-hosted video platforms based on:
 - own video workflow (ffmpeg, metadata database)
 - WordPress CMS

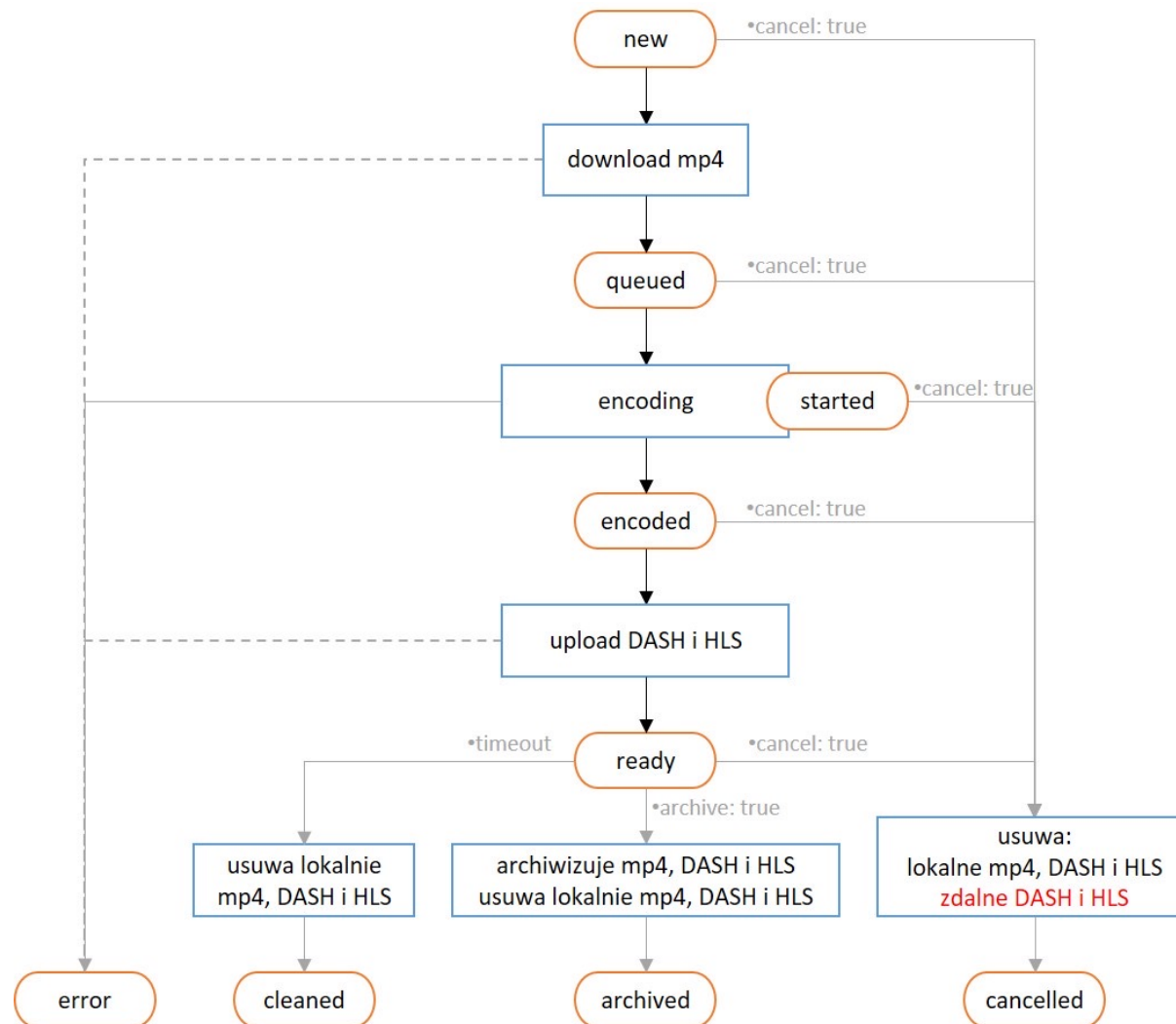
Example services developed by PSNC:

<https://video.poznan.pl>

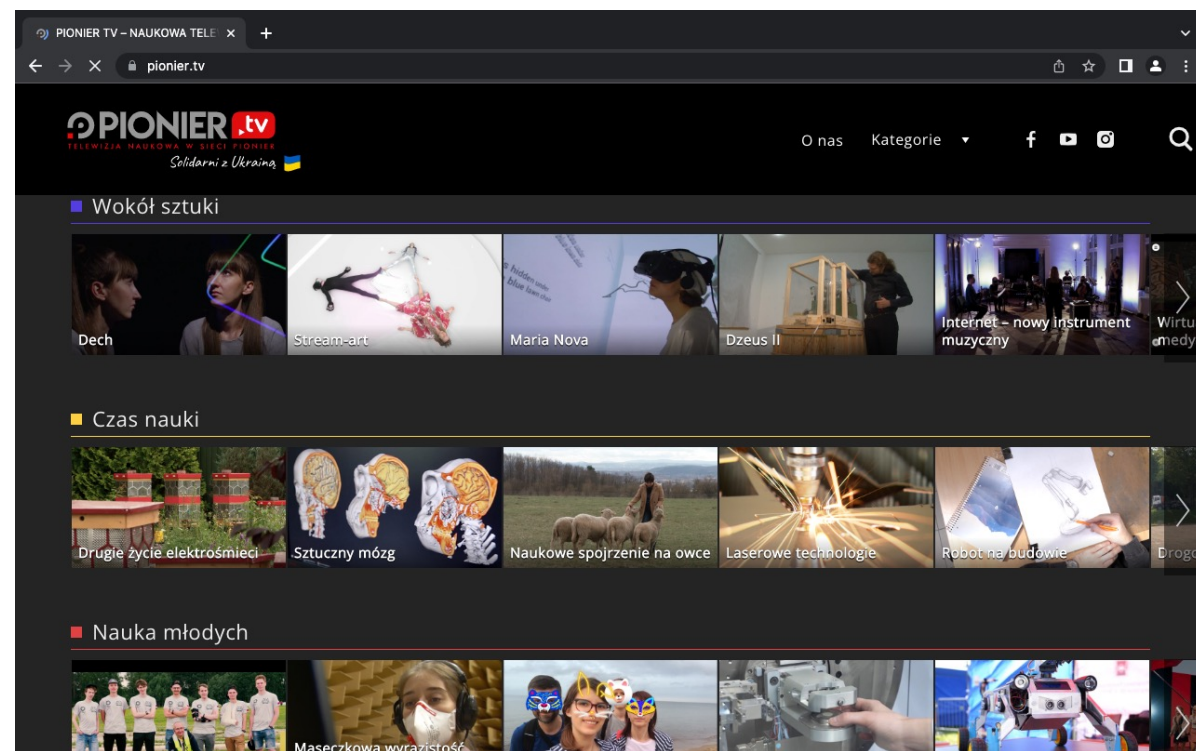
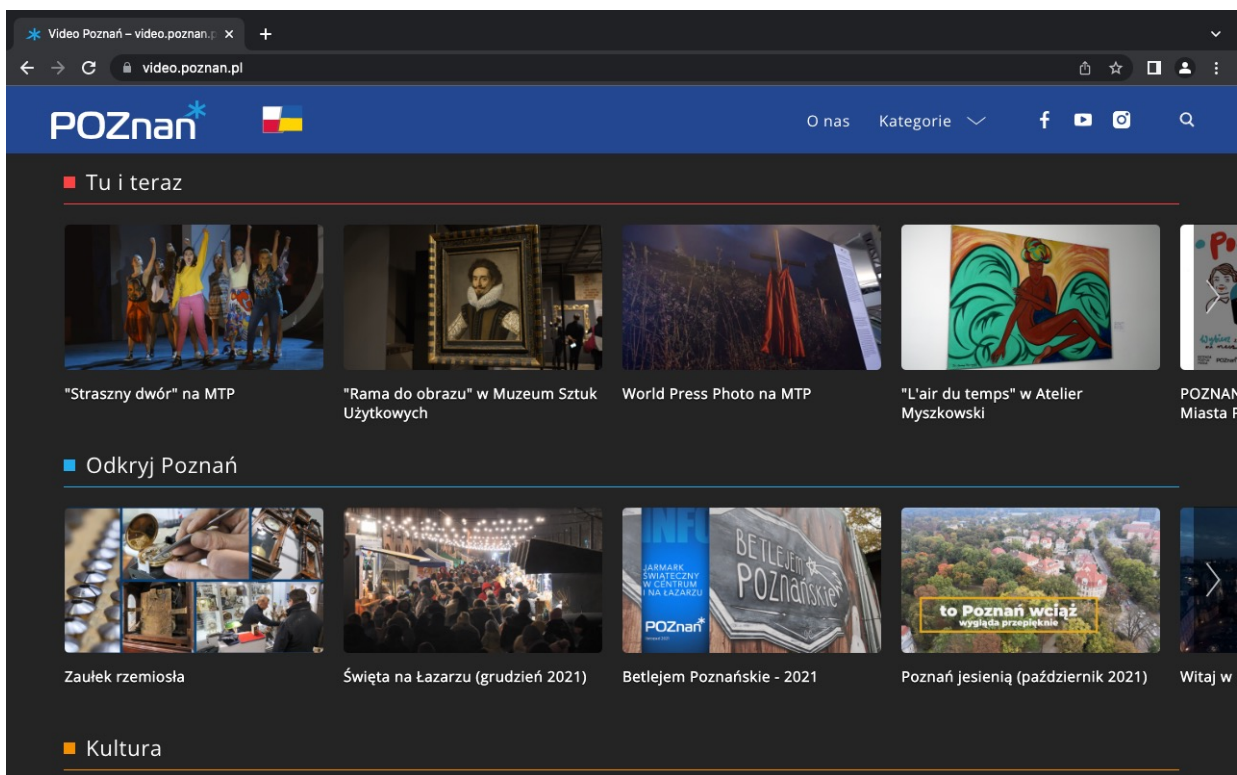
<https://pionier.tv>



Own platform – video workflow



Simple video platforms based on WordPress



Kultura player example in WordPress

„Rama do obrazu” w Muzeum Sztuk Użytkowych 4m 30s
Data publikacji: 2022-05-19

I my tę historię chcemy tutaj opowiedzieć.

Kultura commercial platform

Kultura commercial solution rationale

- If you need a big workflow for a number of clients - more than just a player embedded in our own small platform,
- If you have limited resources for own-platform development and support
- If you need a 3rd party cloud.

Kultura Platform main cooperation models

- **VPaaS (aka Cloud)** – third party clouds and CDNs, no own infrastructure,
- **Hybrid** – some elements on own infrastructure,
- **On-premise** – fully on own infrastructure, no third party partners, own edge servers; for big entities such as universities, corporations, banks, etc.



Kultura Platform cooperation models

Kultura Deployment Options

	Kultura Cloud	On-Premise	Hybrid	Private Cloud
INGEST				
MANAGEMENT				
TRANSCODING			O R	
STORAGE			O R	
VIDEO PORTAL			O R	
DELIVERY			O R	
OPERATIONAL COSTS	\$	\$\$\$	\$\$	\$\$\$
DEPLOYMENT TIME	Immediate	2-6 months	3-8 weeks	2-6 months
MONITORING AND SLA		O R		O R
REQUIRED PERSONNEL	Content Moderator	Moderator + IT Admin + Network Engineer	Moderator + IT Admin	Moderator + IT Admin
SECURITY			+	+
TENANCY	Shared	Single	Shared + Single	Single

Kultura model recommended for KMD3

- **On-premise** model recommended due to:
 - large infrastructural expenditures
 - number of potential clients above 5
 - two data centers involved in this part of the project: PSNC and LodMAN

Kultura will not recommend on-premise model for less than 5 clients (instances).



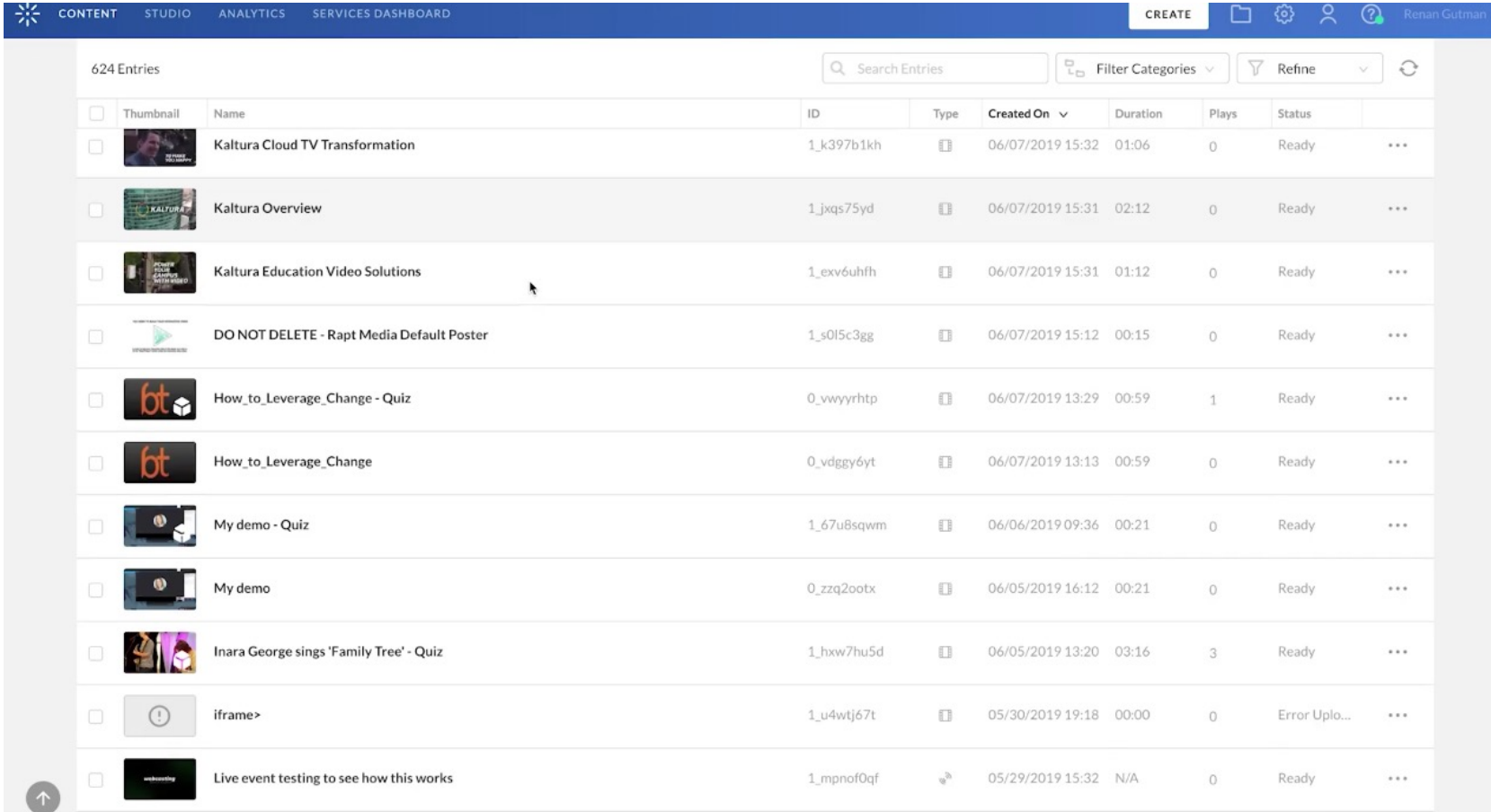
Kultura Management Console























- Plays the role of MAM (Media Asset Management) system
- Functions:
 - User and workflow administration,
 - Ingest, metadata creation, publication,
 - Distribution, transcoding, player configuration,
 - Analysis.



Kultura Management Console

Asset management



624 Entries									
Thumbnail	Name	ID	Type	Created On	Duration	Plays	Status		
<input type="checkbox"/>		Kultura Cloud TV Transformation	1_k397b1kh		06/07/2019 15:32	01:06	0	Ready	...
<input type="checkbox"/>		Kultura Overview	1_jxqs75yd		06/07/2019 15:31	02:12	0	Ready	...
<input type="checkbox"/>		Kultura Education Video Solutions	1_exv6uhfh		06/07/2019 15:31	01:12	0	Ready	...
<input type="checkbox"/>		DO NOT DELETE - Rapt Media Default Poster	1_s0l5c3gg		06/07/2019 15:12	00:15	0	Ready	...
<input type="checkbox"/>		How_to Leverage_Change - Quiz	0_vwyyrhtp		06/07/2019 13:29	00:59	1	Ready	...
<input type="checkbox"/>		How_to Leverage_Change	0_vdgy6yt		06/07/2019 13:13	00:59	0	Ready	...
<input type="checkbox"/>		My demo - Quiz	1_67u8sqwm		06/06/2019 09:36	00:21	0	Ready	...
<input type="checkbox"/>		My demo	0_zzq2ootx		06/05/2019 16:12	00:21	0	Ready	...
<input type="checkbox"/>		Inara George sings 'Family Tree' - Quiz	1_hxw7hu5d		06/05/2019 13:20	03:16	3	Ready	...
<input type="checkbox"/>		iframe>	1_u4wtj67t		05/30/2019 19:18	00:00	0	Error Uplo...	...
<input type="checkbox"/>		Live event testing to see how this works	1_mpnof0qf		05/29/2019 15:32	N/A	0	Ready	...

Kultura Management Console

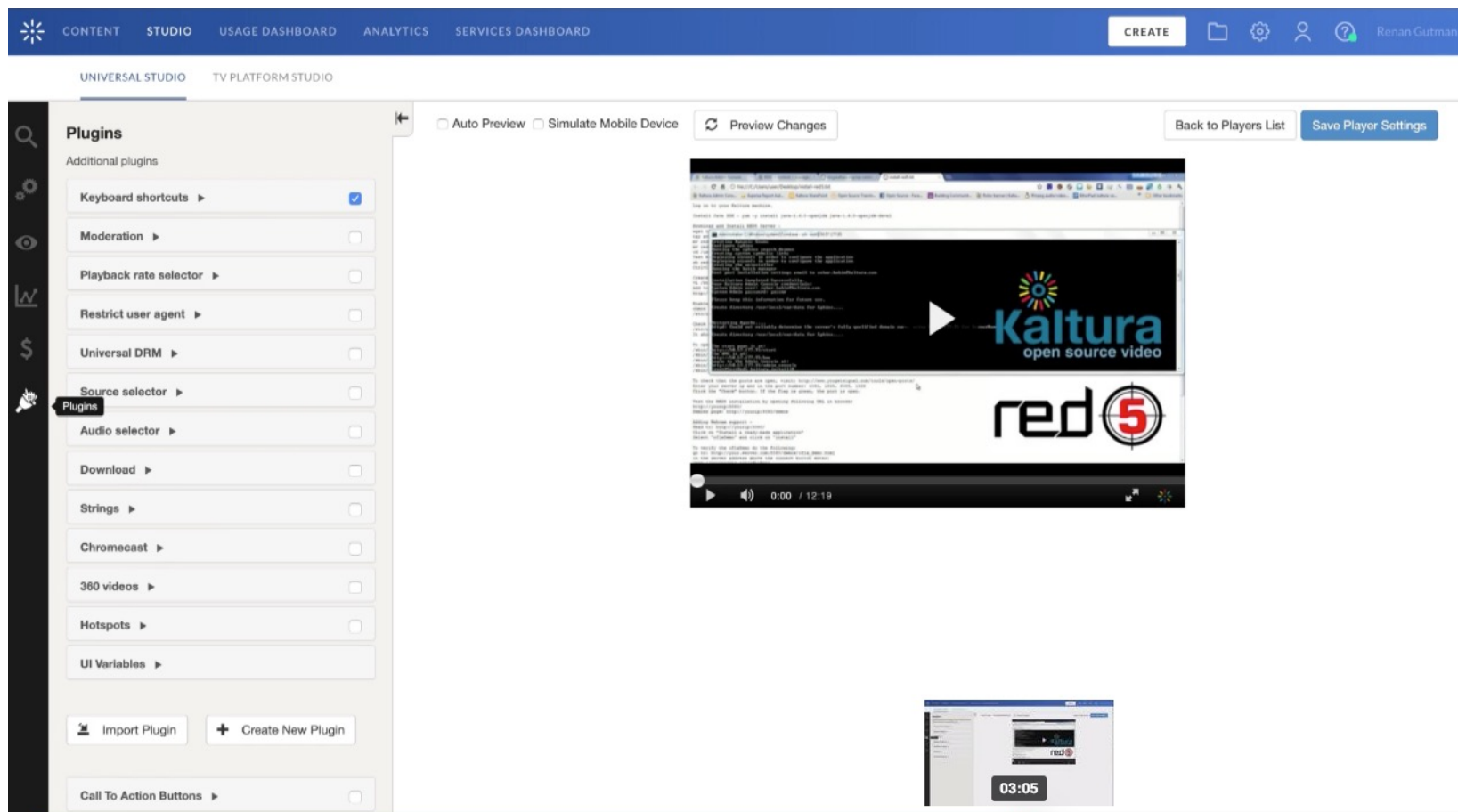
Encoding profiles management

The screenshot displays the 'Kultura Education Video Solutions' page in the Kultura Management Console. The interface includes a top navigation bar with 'CONTENT', 'STUDIO', 'USAGE DASHBOARD', 'ANALYTICS', and 'SERVICES DASHBOARD'. A 'CREATE' button and user profile 'Renan Gutman' are visible in the top right. Below the navigation, there are tabs for 'ENTRIES', 'MODERATION', 'PLAYLISTS', 'SYNDICATION', and 'CATEGORIES'. The main content area shows a video player on the left and a 'Flavors' section on the right. The 'Flavors' section indicates that all required transcoding flavors are available and ready for publishing. Below this, there are buttons for 'Upload from Desktop', 'Import from URL', and 'Link to Remote Storage'. A table lists the available transcoding profiles with columns for Flavor, Asset ID, Format, Codec, Bitrate (kbps), Dimensions, Size (kb), Status, and Tags.

Flavor	Asset ID	Format	Codec	Bitrate (kbps)	Dimensions	Size (kb)	Status	Tags
Source	0_gccn14z8	mp4	avc1	9762	1920 x 1080	86732	OK	source, web
Mobile (3GP)	0_uvixee1	3gp	mpeg-4 visual	362	320 x 176	3225	OK	mobile, mpeg4
Basic/Small - ...	0_rhygffzl	mp4	avc1	458	640 x 360	4075	OK	mobile, web, m...
Basic/Small - ...	0_xu1ndpt9	mp4	avc1	648	854 x 480	5765	OK	mobile, web, m...
WebM	0_qqf9ne3s	webm	v_vp8	797	640 x 360	7086	OK	html5, webm
SD/Small - WE...	0_5j3ykglt	mp4	avc1	902	960 x 540	8017	OK	mobile, web, m...
SD/Large - WE...	0_agtt7ss4	mp4	avc1	1427	1280 x 720	12697	OK	mobile, web, m...

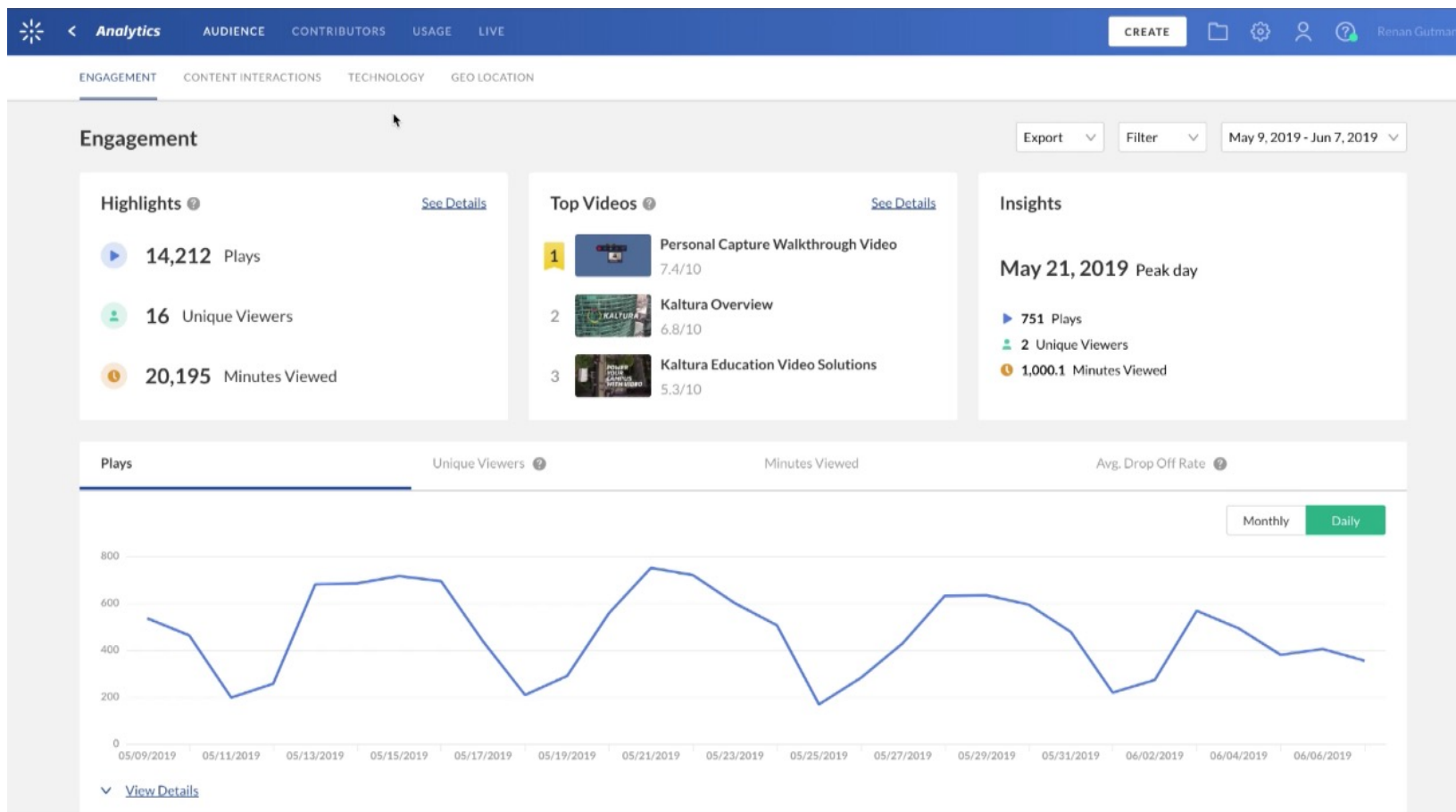
Kultura Management Console

Tool for visual player configuration



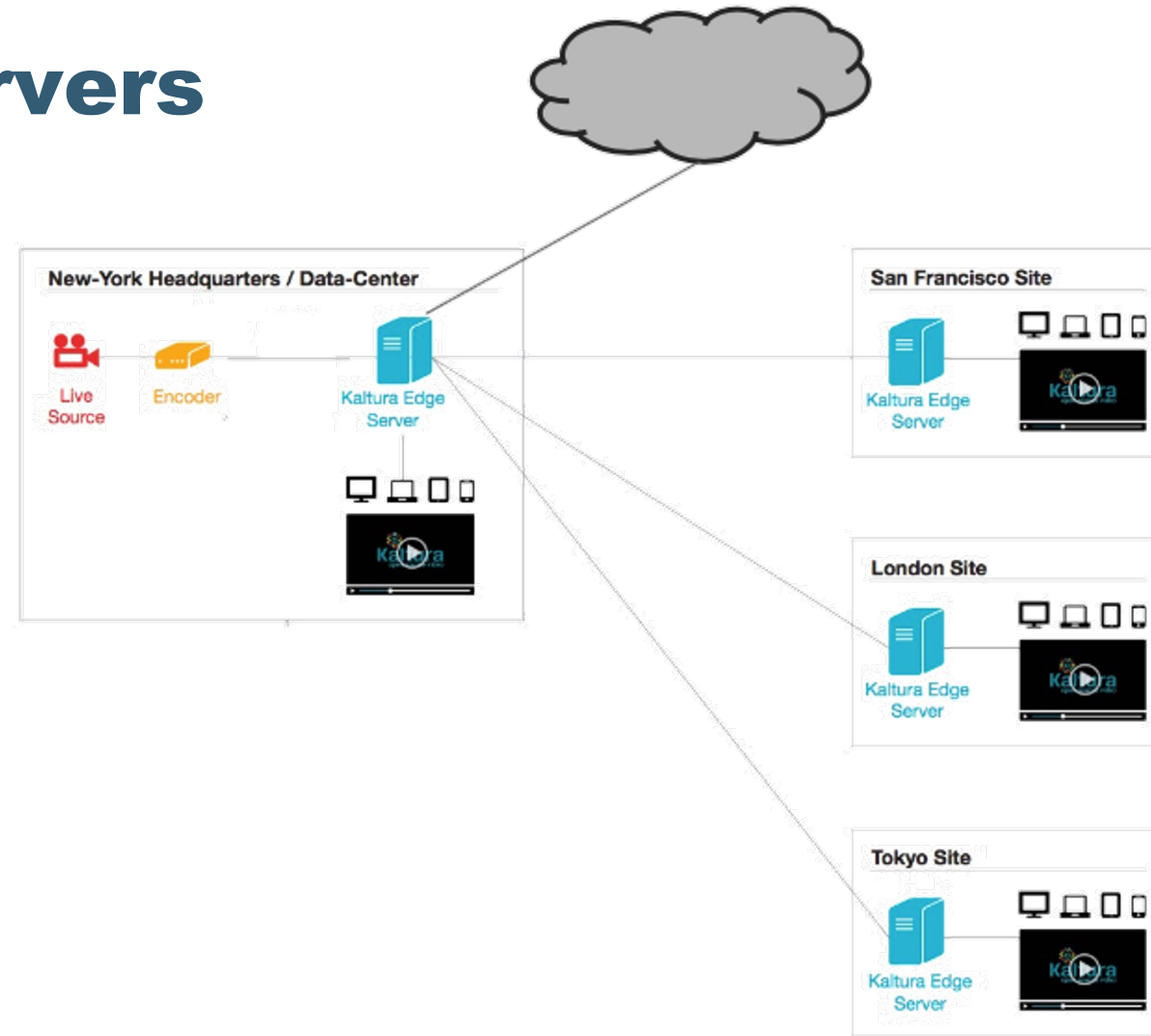
Kultura Management Console

Analytics



Kultura Edge Servers

located in remote locations or in close proximity to viewers



Technical challenges

- **Object storage** – in KMD3 project object storage interface S3 is assumed to access the infrastructure,
- Kaltura only supports NFS,
- Currently analysis with KMD project:
 - how to integrate NFS with S3 using
 - CEPH gateway or
 - S3FS-FUSE
 - ObjectiveFS
- Kaltura system will be given a separated S3 data bucket.



Thank you

Task 2.5 in KMD3 project:

<https://docs.psnc.pl/pages/viewpage.action?pageId=66324936>