ORBOX

File-based Quality Control System

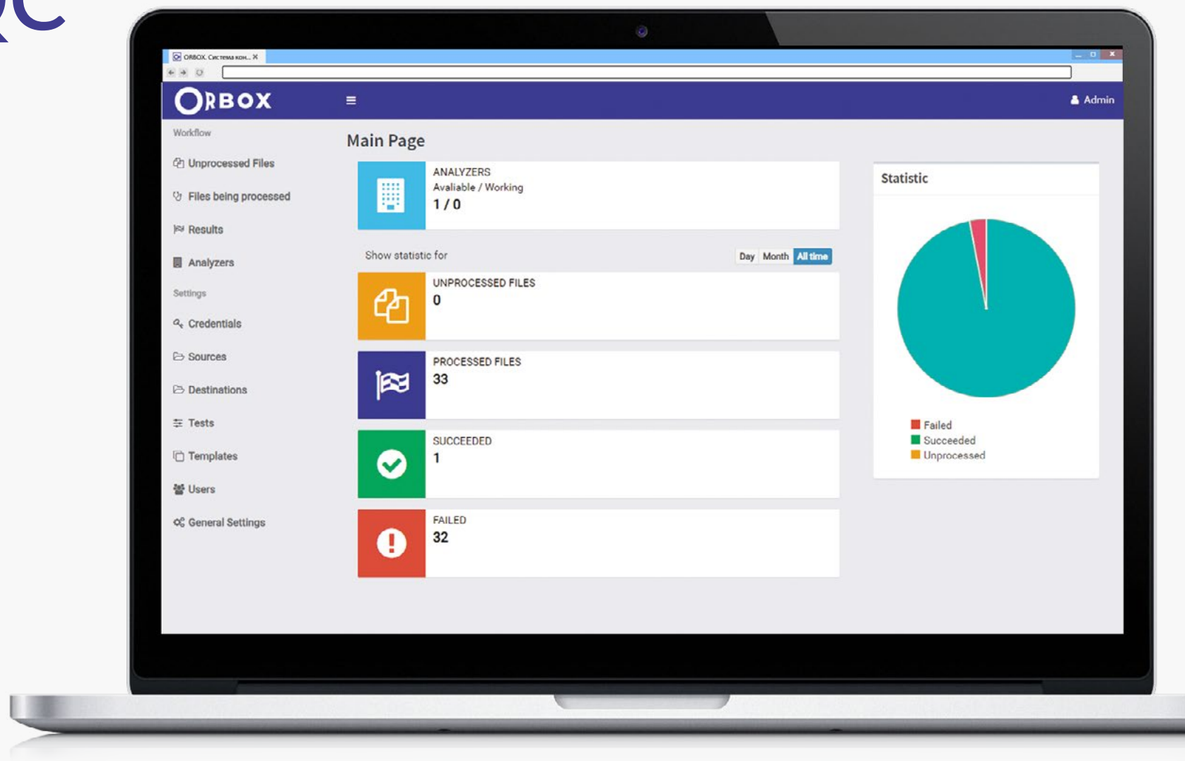
a scalable software solution for automated verification of media files and audio, video and metadata defects identification

tecom GROUP | 2019

ORBOX.
Automated media file-based QC

Software solution for automated verification of media file compliance with technical specifications of broadcasters, media providers and content producers:

- Audio
- Video
- Metadata



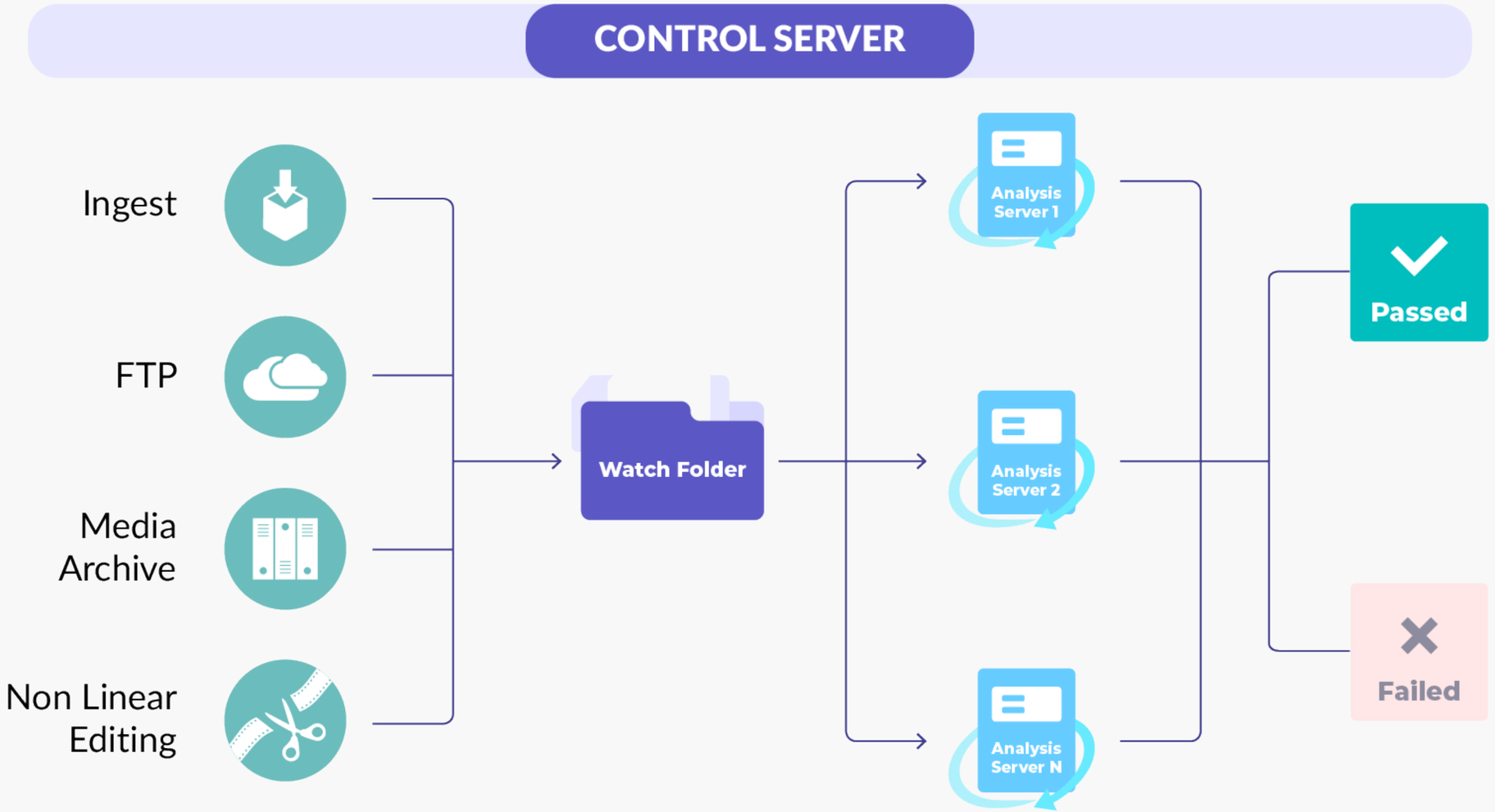
Key Features

- A wide range of checks for file-based content quality verification
- Configurable test templates for specific media formats and sources
- Simple and descriptive reports, media player to playback and edit any defected fragment
- Audio analysis and loudness correction
- Easy to scale by adding analysis servers

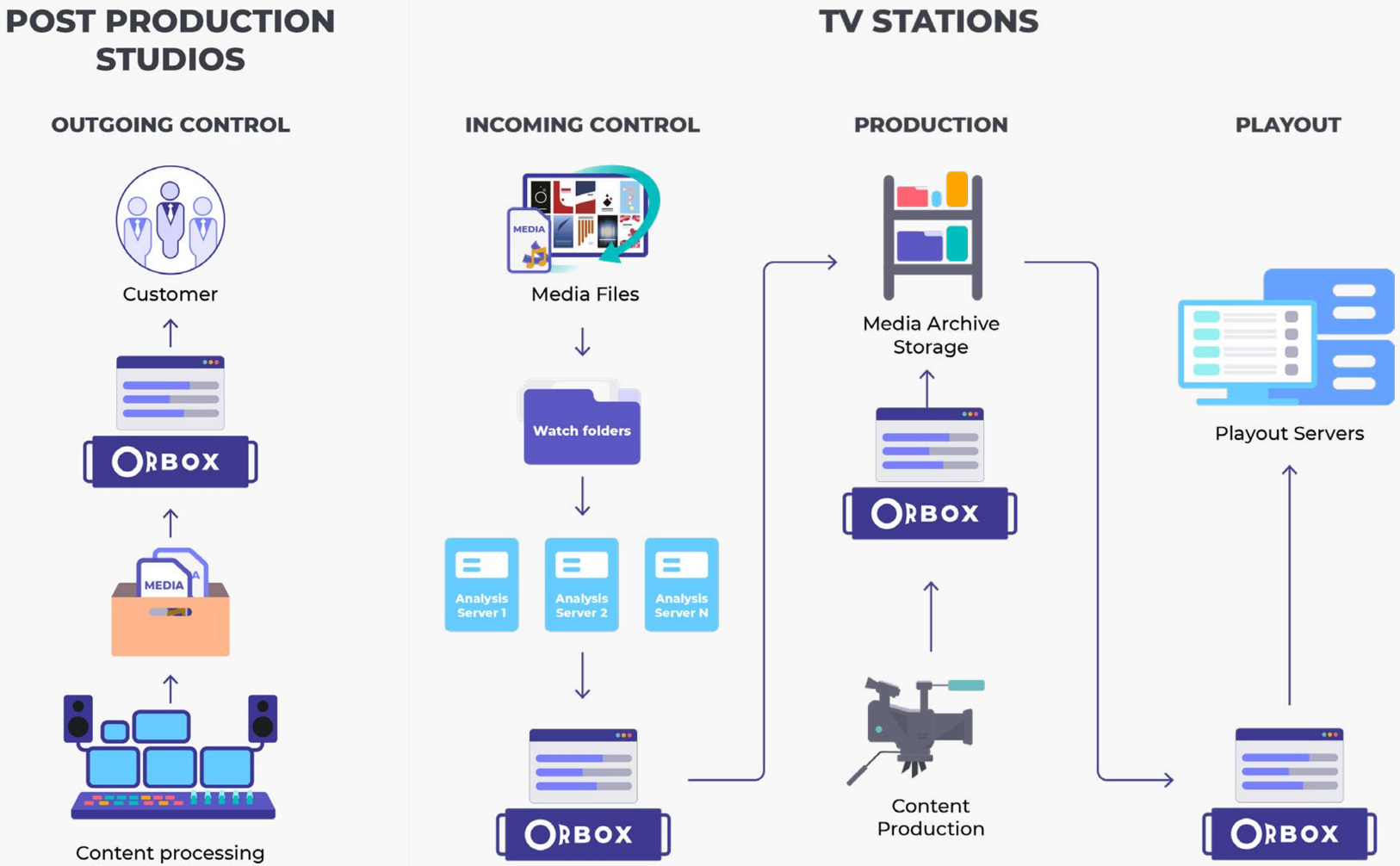
4X times faster than real time*

***Speed of HD content analysis with a full set of tests**

How It Works?

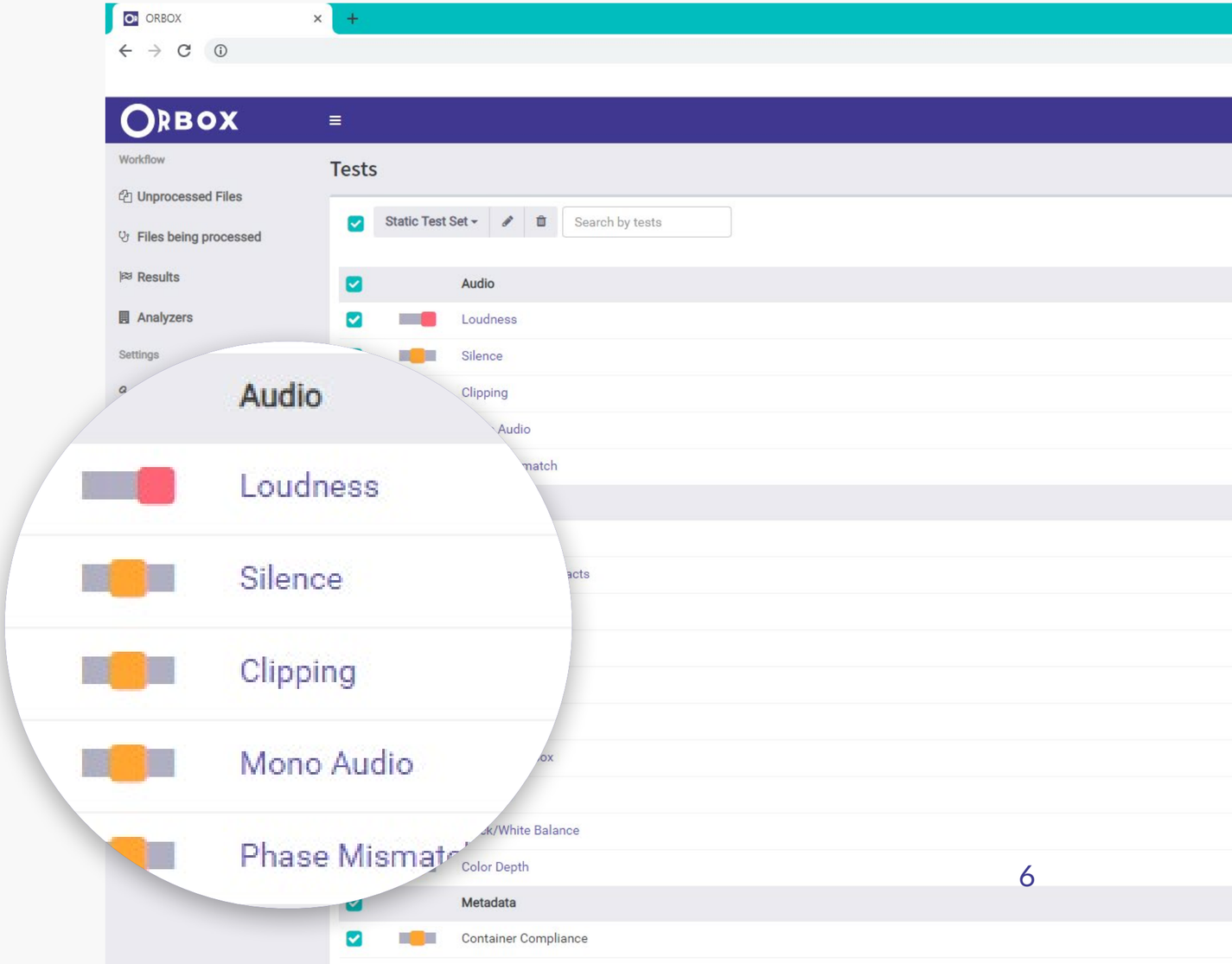

CONTROL SERVER
Ingest
FTP
Media Archive
Non Linear Editing
Watch Folder
Analysis Server 1
Analysis Server 2
Analysis Server N
Passed
Failed

Workflows


POST PRODUCTION STUDIOS
OUTGOING CONTROL
Customer
ORBOX
MEDIA
Content processing
TV STATIONS
INCOMING CONTROL
MEDIA
Media Files
Watch folders
Analysis Server 1
Analysis Server 2
Analysis Server N
ORBOX
PRODUCTION
Media Archive Storage
ORBOX
Content Production
PLAYOUT
Playout Servers
ORBOX

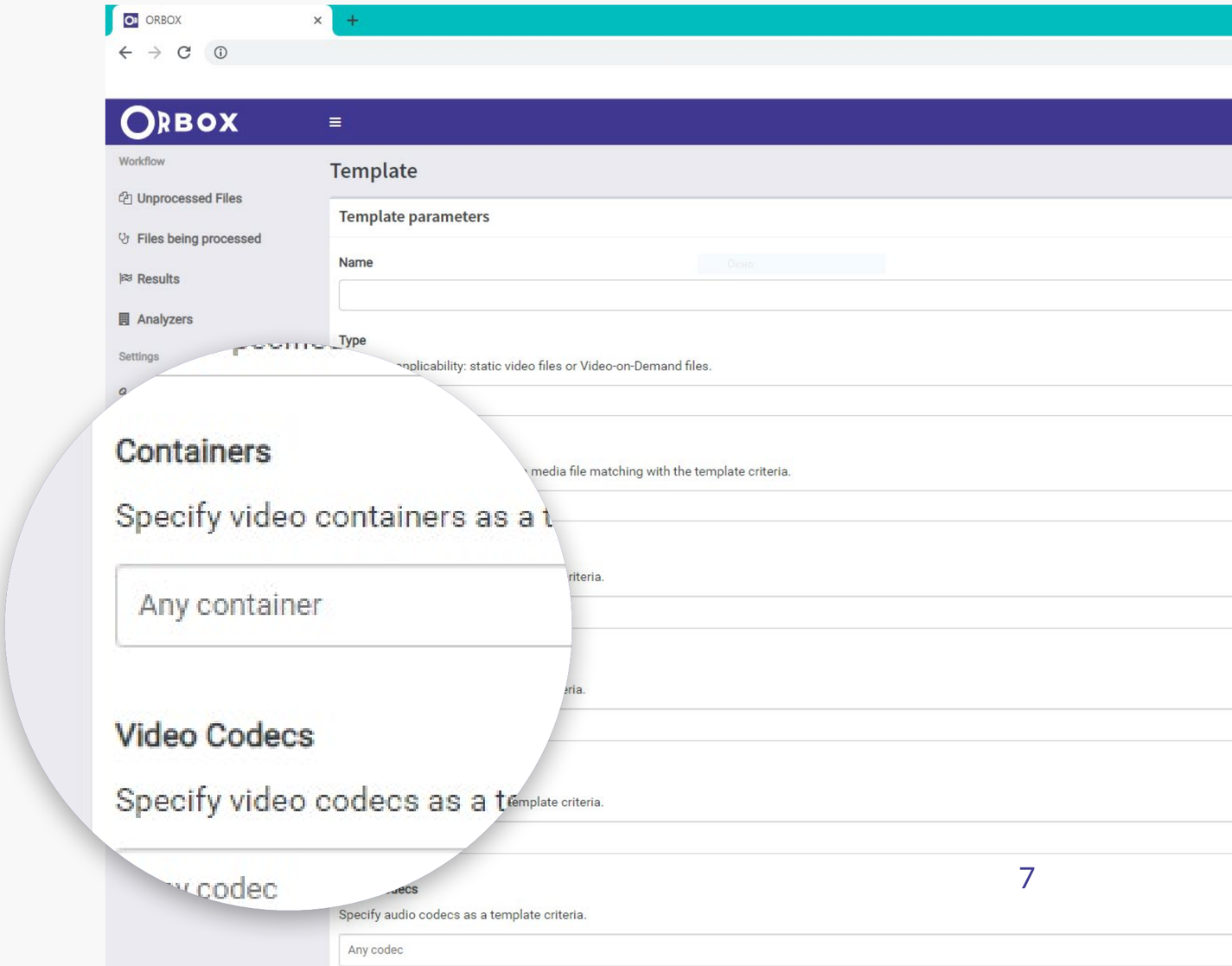
Test Configuration

- Each test can be manually configured or default parameters can be applied
- The system enables to select critical tests. If a critical test is failed, further process of file verification is stopped
- 3 levels:
  - Low
  - Normal
  - Critical
- Import and export of data



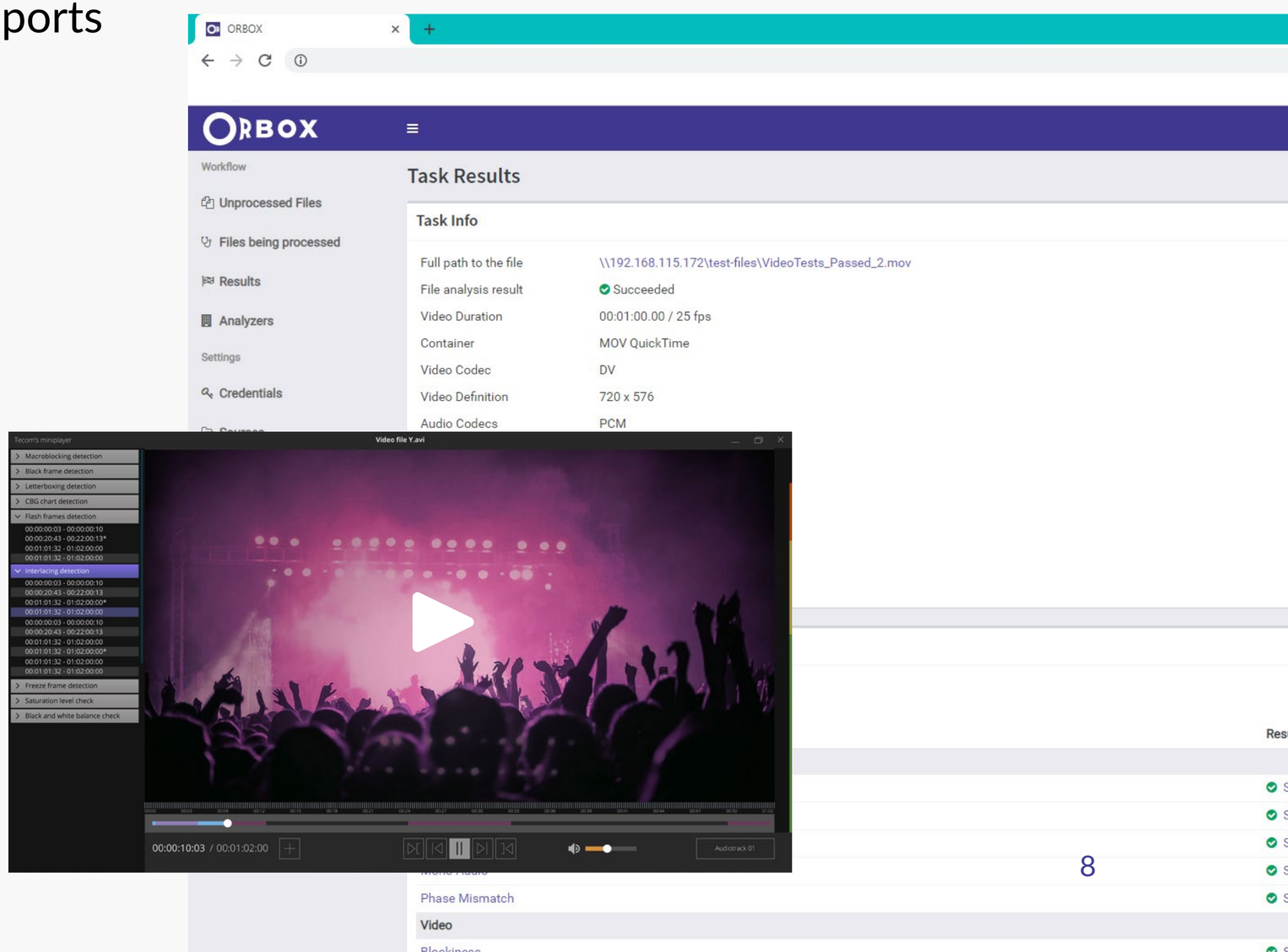
Workflow Templates

- Setting QC rules to check multi-formatted files coming from different sources
- Routing: after analysis files can be routed to different folders
- The following parameters can be set:
  - Video and audio codecs
  - Video resolution



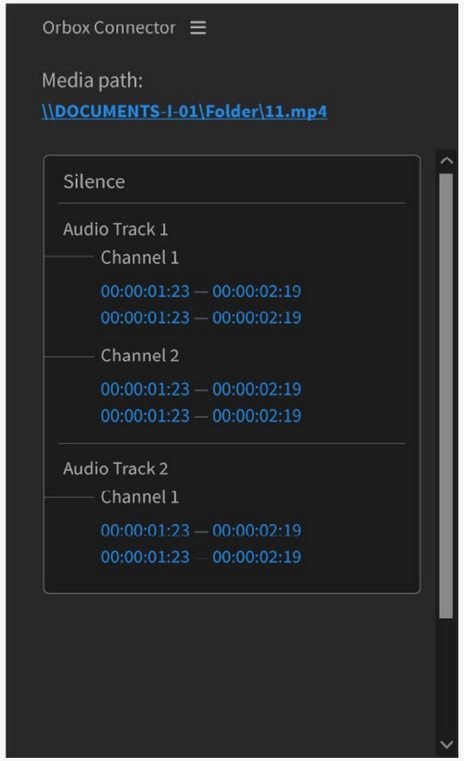
Watching QC Results

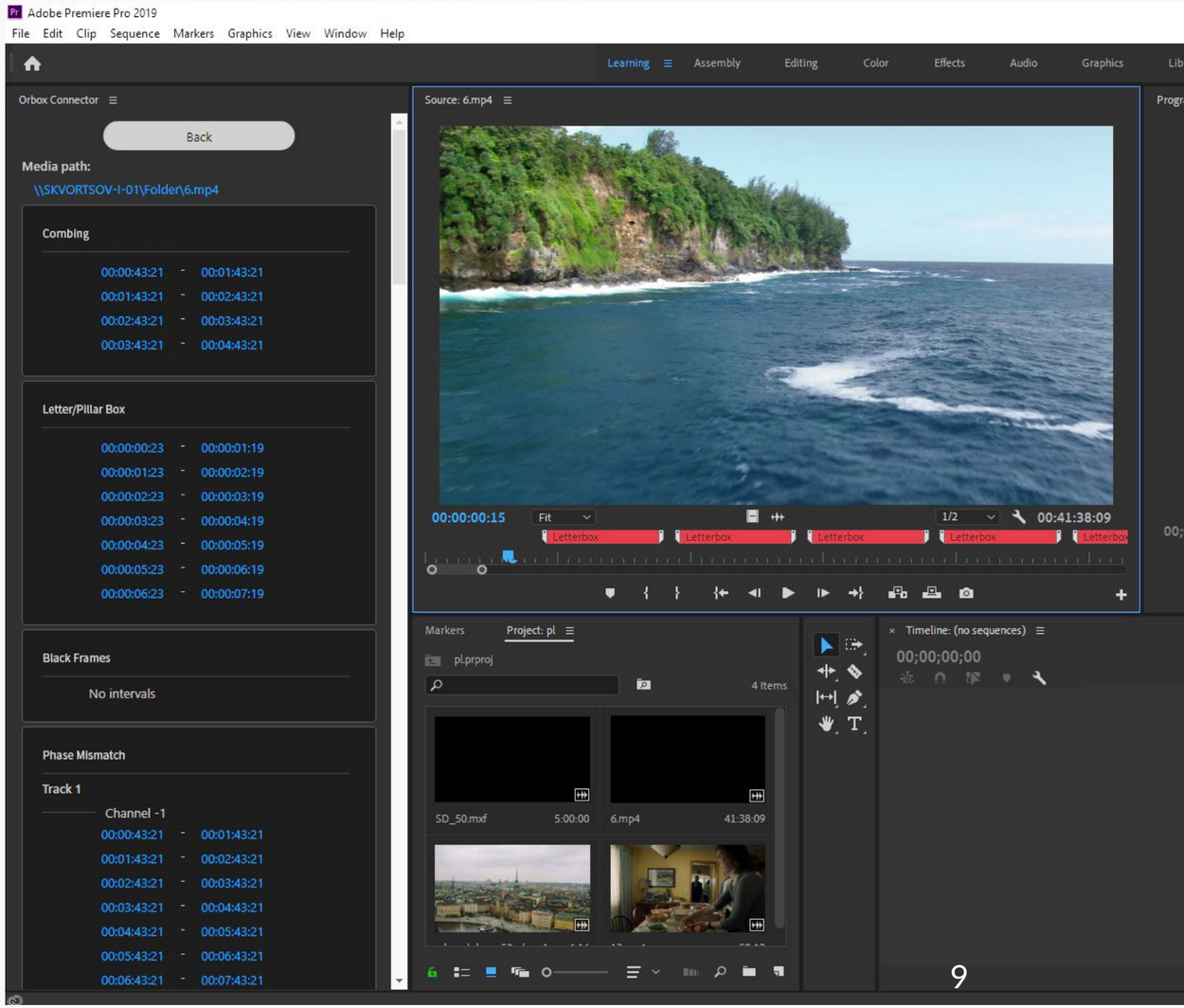
- Basic and detailed PDF/HTML reports
- Media players to watch and edit QC results:
  - Web-based player
  - Windows player (including image output on SDI display)



Plugin for Adobe Premiere Pro

Plugin for Adobe Premiere Pro enables to watch the QC results right within the video editing program interface



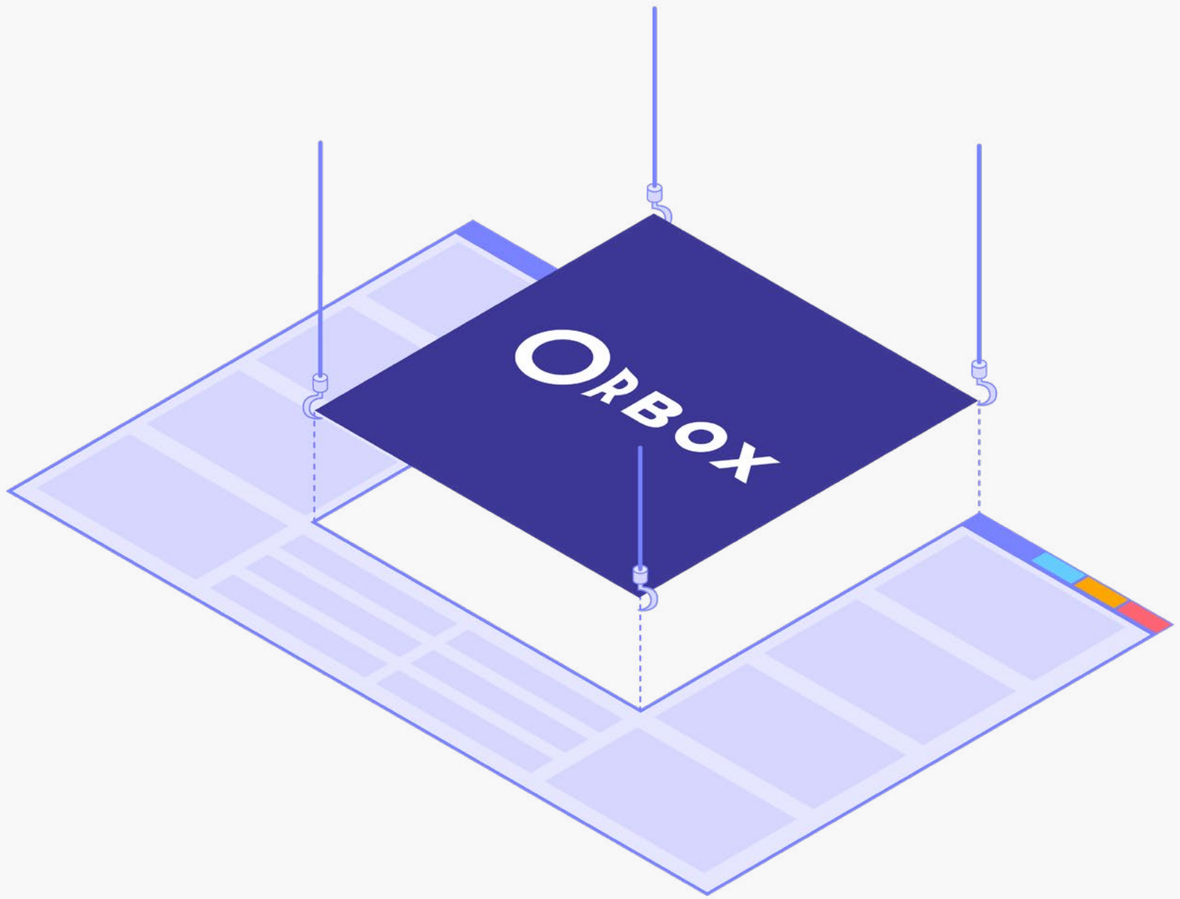


Loudness

- Audio analysis and loudness correction in compliance with EBU R128 and other industry standards
- Channel mapping

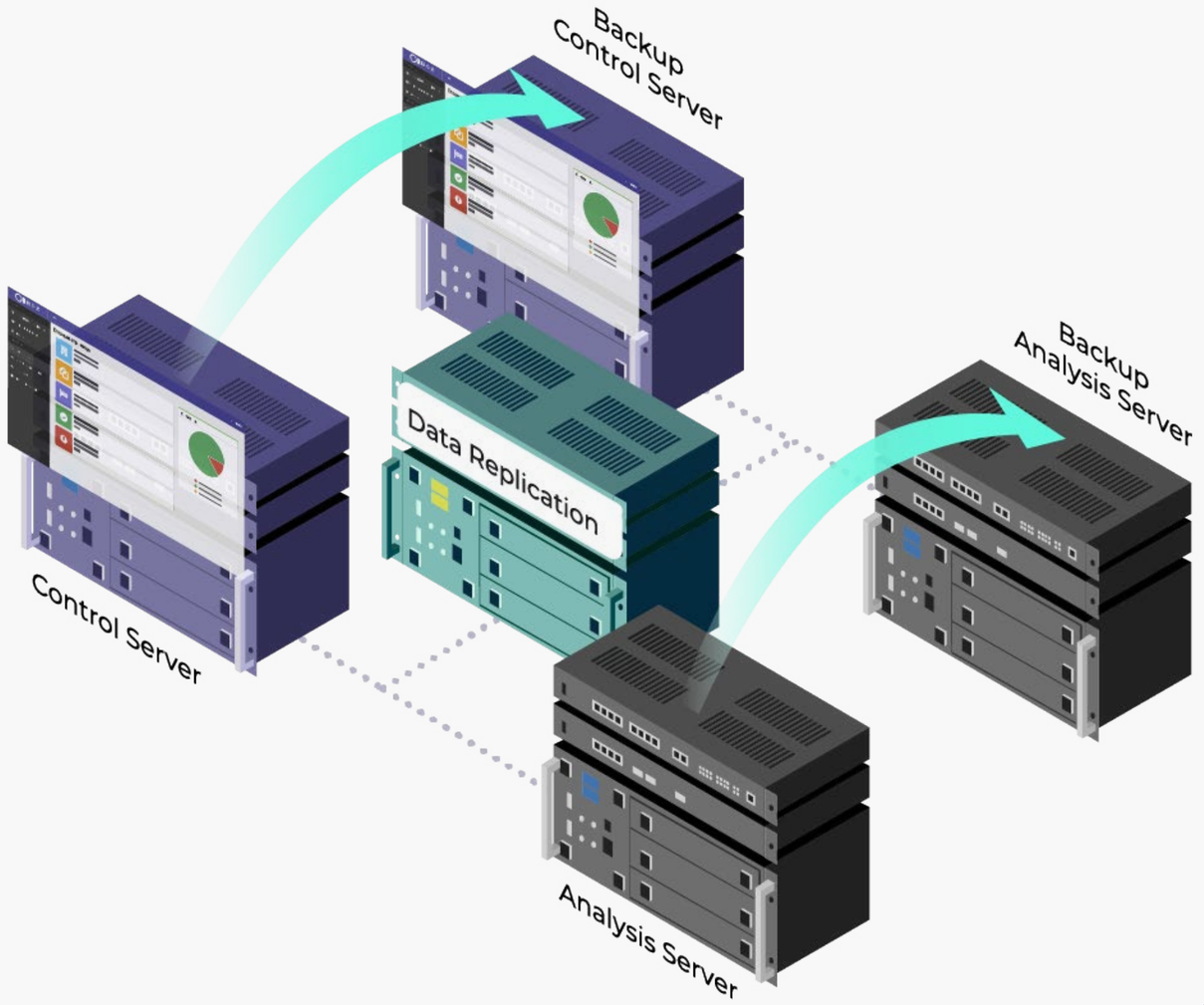
REST API

Software integration with any third-party system



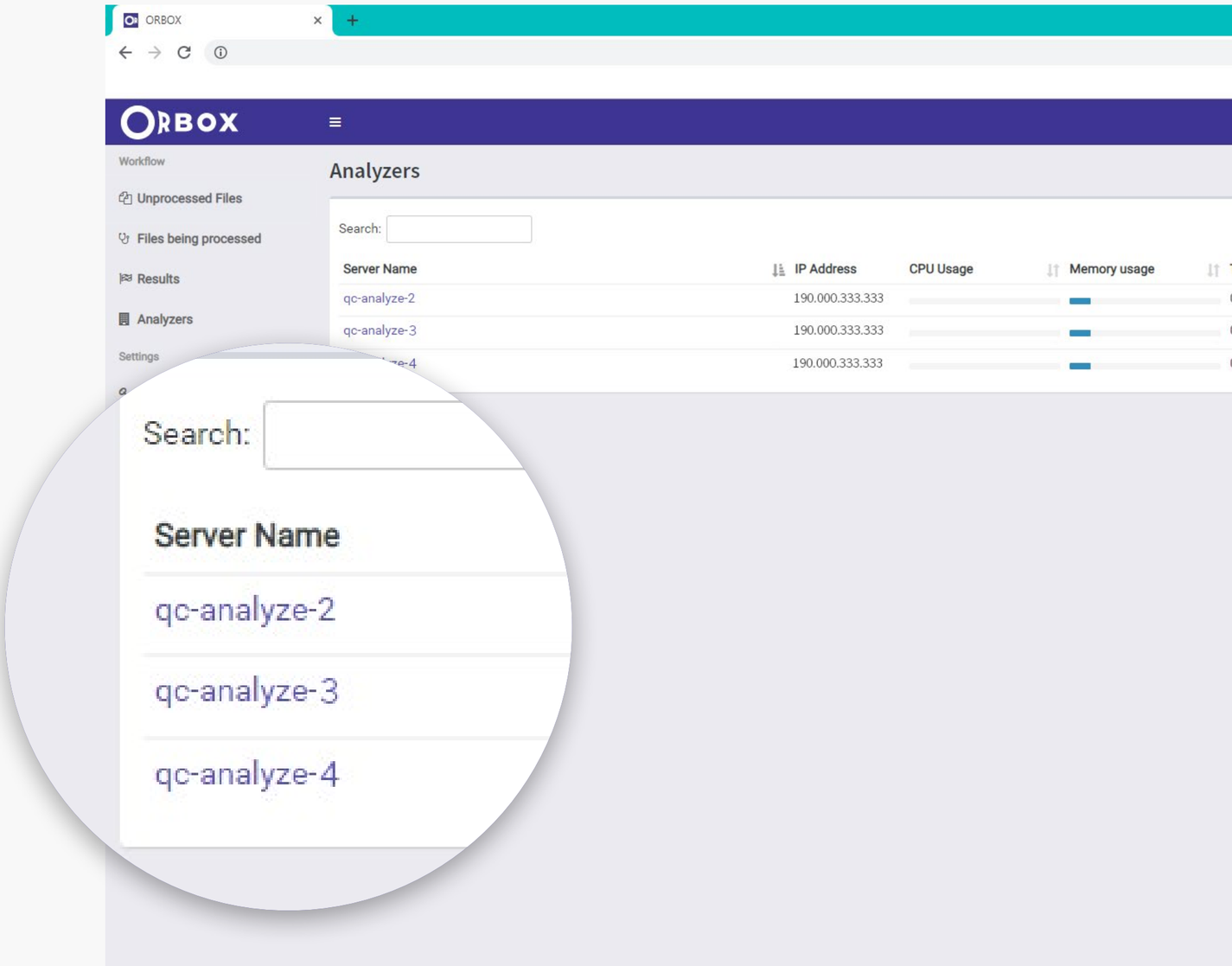
System Redundancy

Automatic hot redundancy in case any server goes down



Scalability and Licensing

- The system is easily expanded by adding new analysis servers
- Control server is responsible for load balancing between analysis servers, as well as providing reports via web interface



ORBOX Tests

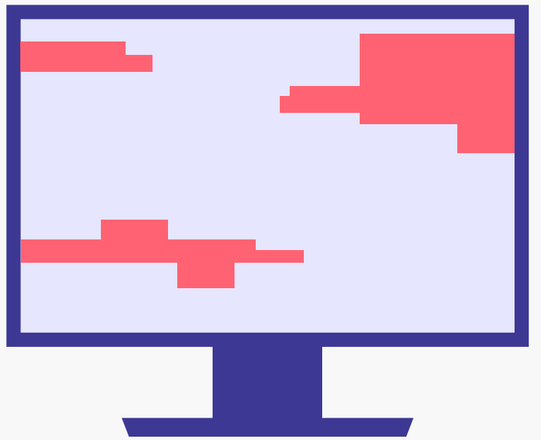
Metadata

- Container Compliance
- Container Integrity
- Audio/Video Codecs
- Frame Size
- Aspect Ratio
- Frame Rate
- Video Bitrate
- Real Video Bitrate
- Scan Mode
- Field Order
- Chroma Subsampling
- Start Time Code
- No. of Audio Channels
- Audio Sampling Rate
- Audio Bit Depth
- Video Bit Depth

Video

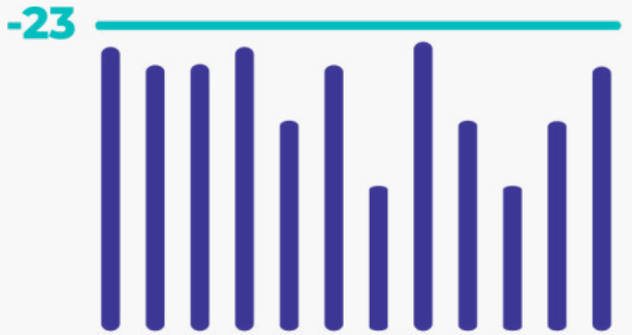
- Letter/Pillar Box
- Flash Frames
- Blockiness
- Compression Artifacts
- Test Pattern
- Freeze Frames
- Black Frames

- Combing
- Black and White Levels
- Chroma Level



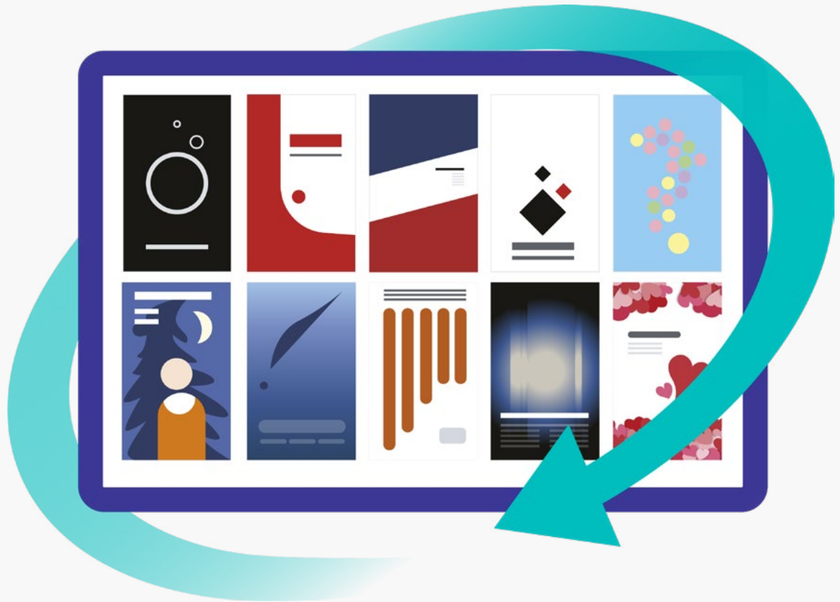
Audio

- Loudness
- Silence
- Clipping
- Mono
- Audio Phase



VOD Verification

- The quality of media content is priority #1 for OTT service providers
- The system detects VOD content defects before its delivery to subscribers
- VOD content verification is based on video, audio and metadata parameters at any point of origination and content delivery to broadcast servers



VOD Tests

- GOP Structure
- Validation of Chunks: Start Time Consistency, Structure Validation
- HLS Manifest Consistency
- HLS Bitrate Conformance
- Subtitles and Closed Captions
- PTS DTS Continuity

HDR Tests

- HDR Brightness Conversion Systems
- HDR Mastering Display Luminance
- HDR Display Primaries
- HDR Chromaticity Of White Point
- HDR MaxCll
- HDR MaxFall
- HDR Colour Range
- HDR Colour Primaries

Standards:

SMPTE ST-2094, BT.2100, ST-2084

Supported Formats

Containers

- AVI
- MXF
- MP4
- MOV
- HLS

Codecs

- DV/DVCPRO/DVCPROHD
- MPEG-2
- H.264
- H.265
- Apple ProRes
- Avid DNxHD
- AAC, PCM

System Requirements

The system consists of the analysis server and the control server:

Control server

- Processor: Intel Core i5
- 8 GB RAM
- 300 GB HDD
- OS: Windows 8, 10

Analysis server

- Processor: Intel Xeon E5-2630 (x2)
- 16 GB RAM
- 1TB HDD (RAID1)
- OS: Debian 9, Ubuntu 18.04

Servers can be virtual and should have the same technical characteristics as “physical” ones

Our Customers

Customer

Match TV — Russian free-to-air channel about sports and healthy lifestyle that began broadcasting on November 1, 2015

Task

To develop an automated file-based QC system for major Russian sports TV station to process multi-format media files from multiple sources

“ORBOX with its constantly enhanced feature set meets all quality control requirements we have. It helps us to ensure the best-in-class viewing experience for every Match TV user”.

Andrey Udalov,
CTO for “Match TV”

Results

- Automated processing of large media file volumes
- Minimized reputational and financial risks caused by defected content
- Cost reduction in QC department

НИКА TV

Customer

Nika TV — Russian satellite TV and radio broadcaster going on air since February 20, 1991. It serves Russia and other CIS countries, Baltic states, countries of Western and Eastern Europe

Task

To integrate an automated file-based QC system into customer's workflow to verify technical parameters of media files produced by the TV station and its partners. MPEG PS files support required

"As compared to a wide range of competitive QC tools, ORBOX has the best price-quality ratio and seems to be specifically designed to meet the unique needs of our TV station".

Aleksander Varechkin,
CTO for "Nika TV"

Results

- Receiving simple and descriptive reports about detected errors and files incompliant with technical requirements
- Quick analysis helps to decide whether the content is ready to be broadcast
- Real-time tracking of failures in content production processes

Contacts

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