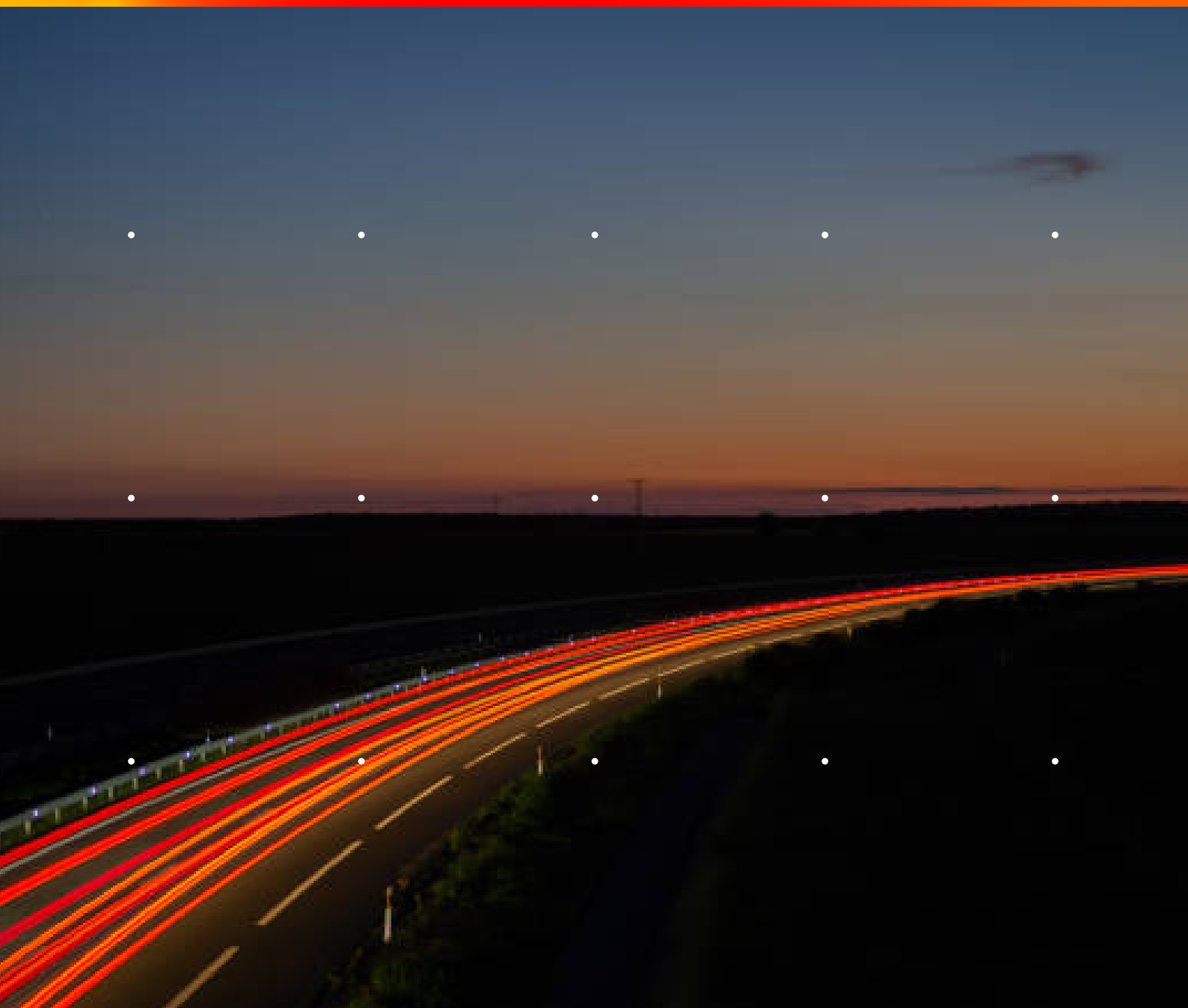
PFT

PFT delivers AI-led automation of Segmentation workflows to ITV.



Client Profile

ITV is a leading media and entertainment company, with the largest commercial television network in the UK and a global production and distribution business, with over 55 labels. They reach over 40 million viewers weekly with programs on ITV's family of channels and the ITV Hub, which is available on 28 platforms and over 90% of connected televisions sold in the UK.

Business Context

ITV needed help with its segmentation and time code capture process, which was manual and time-consuming. The process involved identifying and timecoding 12 segments, including physical segments like color bars, blacks, and slates, and creative segments like recaps, PRTS, credits, program part segments, and bumpers. ITV used to manage the entire process using a MAM solution and a team of ITV tagging operators. Soon, it was clear to ITV that tagging was a necessary task, but it was utilizing its resources inefficiently and not contributing to the value of the content.

ITV was faced with the following challenges:

- **Manual Process:** The process was highly manual and labor-intensive, prone to human errors
- **Time-consuming:** The manual segmentation process was slow leading to inefficiencies and high costs
- **Scalability:** The process was not able to cater to high volumes as it needed linear manpower scale that needed multiple passes and required high accuracy for playout

PFT Solution

PFT showcased CLEAR® AI to ITV. The CLEAR® AI Segmentation toolkit allows M&E organizations to automatically identify frame accurate time codes and segments. It further provides a cloud editor, which enables operators to review, and QC AI outputs and adjust frame boundaries of time codes where needed. The CLEAR® AI Segmentation toolkit ensures near 100% frame accuracy and 100% automation of workflows to extract the content segments. This toolkit was further customized for ITV to ensure high performance, scalability and low manual review time.

The project spanned four stages:

- CLEAR® AI Proof of Concept and Trial: A predefined timeline of 12 weeks was agreed upon to process a specific content volume and address the 12 TCC use cases with a pre-set accuracy level.
- CLEAR® AI led the ITV TCC process to go live with an XML integration approach supplying the AI time codes to an AWS (Amazon Web Services) end point on S3 (Simple Storage Service).
- Integration between CLEAR® AI and ITV systems to trigger jobs directly via APIs and interfaces.
- Additional efficiencies with OAK-Tenabled authentication and CLEAR® AI-led monthly metering and consumption.

Key project milestones tracked were based on the four stages of the project, and each of these was met and agreed upon on both ends with a smooth rollout plan. PFT and ITV jointly created a scope and solution design strategy. PFT created solution designs in two areas - Integration with ITV systems and designing suitable algorithms for solving ITV TCC capture guidelines.

Stage 1

CLEAR® AI POC and Trial: A predefined timeline of 12 weeks was agreed upon to process a specific content volume and address the 12 TCC use cases with a pre-set accuracy level.

PFT successfully demonstrated that its existing off-the-shelf AI platform could identify at least 8 of the 12 segmentation use cases. PFT took on the challenge to solve ITV's current way of time code capture and processing ITV's sample content using CLEAR® AI. It demonstrated that CLEAR® AI could identify the time codes for eight kinds of time code capture guidelines without any changes to the existing algorithms, including:

- Essence
- Bars & Ton
- Clock/Slat
- Recap
- Opening Title
- Program Part Segments
- PRTS
- Textless Elements

The segments above were identified with over 90% accuracy in the initial stage. As a result, the QC could be performed in less than 3 minutes instead of the 15-20 minutes it took when performed manually. This gave ITV the confidence to embark on a POC to develop further and customize the software to solve the additional four use cases. At the end of this exercise, CLEAR® AI had processed about 50 hours of content in the POC stage.

The foremost challenge that came along was ITV's perception of AI accuracy. In the initial phases of the POC, there were several questions about how AI accuracy is being measured and reported. While working with AI, people need to be educated on the art of possible. Instead of a buy-and-plug-in approach, AI requires an iterative process that consistently delivers excellent results once understood. ITV's curiosities were understandable.

ITV and PFT teams were following different measurement metrics. So, the PFT team set up a weekly governance mechanism to discuss these challenges and determine resolutions. Firstly, PFT put a standard metrics and scorecard template for accurate measurement and defined how it had to be tracked. Then, the teams mutually re-visited how the ITV Content Operations team had to perform the content validation step.

These timely measures removed all ambiguities regarding AI's accuracy levels. In addition, the reports were now driven by facts sans assumptions. Within weeks, the AI accuracy shot from 60% to more than 90% for most use cases, which were not addressed before the POC.

Stage 2

XML integration: CLEAR® AI-led the ITV TCC process to go live based on the XML integration approach. An integration between ITV and CLEAR® AI had to be established based on the AWS notifications. This framework involved a series of tasks. First, the ITV team would upload a new proxy asset to a folder under its AWS S3 account. CLEAR® AI would pick the file for processing. For each file uploaded (with storage path), S3 would call the CLEAR® AI API to process the asset further. Via the CLEAR® AI TCC Discovery engine, the TCC results would get populated on the CLEAR® AI UI. Once processing is completed, ITV's operator will be notified of the TCC completion. Then ITV's QC team would log in, verify (or edit the result if required) and finalize the results. After finalization, the XML would be created and uploaded under the ITV S3 account.

Stage 3

Taking the API-based integration approach: Integration between ITV and CLEAR® AI to be based on RESTful API calls.

As the next step, the integration between CLEAR® AI and ITV systems had to be established to trigger jobs directly via APIs and interfaces. So, again, PFT worked with ITV's Content Delivery team, architects, and engineering teams to learn the process and tune its AI engines to deliver.

ITV team would upload the files with CLEAR® AI API with various details like storage path and job name. CLEAR® AI would process the asset based on the URL sent by ITV at the time of job submission. The job would be processed with its due status and URL to get the result. Based on the job status (if successful), ITV would instruct the QC member to verify the result in CLEAR® AI UI. After thorough verification, CLEAR ® AI would re-visit the QC status of the job and a URL to get the result. ITV could now use this URL to get the result. It would further utilize it to create the XML and use it in ITV's current MAM.

Enriching this stage to replace it with a more enriched work order functionality in the CLEAR® AI is underway.

Stage 4

As this phase progresses, we shall see additional efficiencies related to OKTA-enabled authentication. In addition, this phase also includes enhancements in reporting and metering, facilitating more intelligent analytics and transparency.

AWS and ITV on CLEAR® AI

- CLEAR® AI for ITV is deployed on AWS Ireland
- The solution is scalable and cost-viable because it was deployed with a well-architected solution on AWS Elastic Kubernetes service
- It enabled us to deploy it in a high availability architecture, in a multi-availability zone solution that makes sure that if at all an AZ goes down, the service continues uninterrupted
- It enabled PFT to scale on need, both scale up and scale down, ensuring optimized costs even with burst workloads

Challenges

During the project, PFT and ITV faced two key challenges: education and integration. To overcome these challenges, PFT took a consultative and transparent approach and worked closely with ITV's stakeholders through multiple workshops, demos, and POCs. This approach helped build a tight-knit team between ITV and PFT and ensured a successful outcome.

Risk Mitigation

To ensure accuracy, PFT took a hybrid approach where the software did the heavy lifting and humans performed the QC element of the AI output. This allowed for the continuous improvement of accuracy.

> "I am impressed with CLEAR® AI and PFT's approach to making AI work for us. PFT understands that each media enterprise is unique in terms of business objectives and the nature of the content, and hence the AI solution cannot have a 'one size fits all' approach. Instead, their AI experts worked with our teams to understand the challenges and delivered a solution that truly meets the efficiency goals we had envisaged when we commissioned this project."

Sonny Hanley
Chief Engineer, Channel 4

PFT successfully deployed the first-of-its-kind, automated workflow to aid ITV in capturing time codes of the various content that needs to be prepared and sent further for delivery and playout. In addition, PFT's transparent and consultative approach helped build a tight-knit team between ITV and PFT and ensured a successful outcome.

Client Outcome

ITV processed a specific content volume and addressed the 12 TCC use cases with a pre-set accuracy level within 12 weeks. The ITV TCC process went live with an XML integration approach. There was a seamless integration between CLEAR® AI and ITV systems to trigger jobs directly via API and interfaces.

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PFT delivered this ambitious project in an unprecedented timescale of just one year. ITV leveraged CLEAR® AI to mark the segments at 95-100% accuracy, followed by human QC, and complete the entire process in about 3 minutes instead of the 15-20 minutes it took when performed manually.

With the CLEAR® AI, ITV can now:

- Review and QC automatically identified segments.
- Filter content segments with ease.
- Process thousands of hours of content at scale without worrying over human intervention and speed.