



PFT

# CLEAR<sup>®</sup> VISION CLOUD

Making AI Work For You



# CHALLENGING THE STATUS QUO

Almost everything is changing – target audiences, consumer behavior, trends, technologies, and the economy. Products, processes, and practices which were perfectly acceptable at one point in time are eventually becoming outdated and replaced by more innovative ones. Organizations that stick to the status quo inevitably lose more than just market share; they erode mind share too.

Artificial intelligence is a hot topic right now. Driven by a fear of losing out, a few companies have announced AI-focused initiatives. Unfortunately, most of these efforts fail. They will fail not because AI is all hype but because companies are approaching AI-driven innovation incorrectly. And this isn't the first time companies have made this kind of mistake.

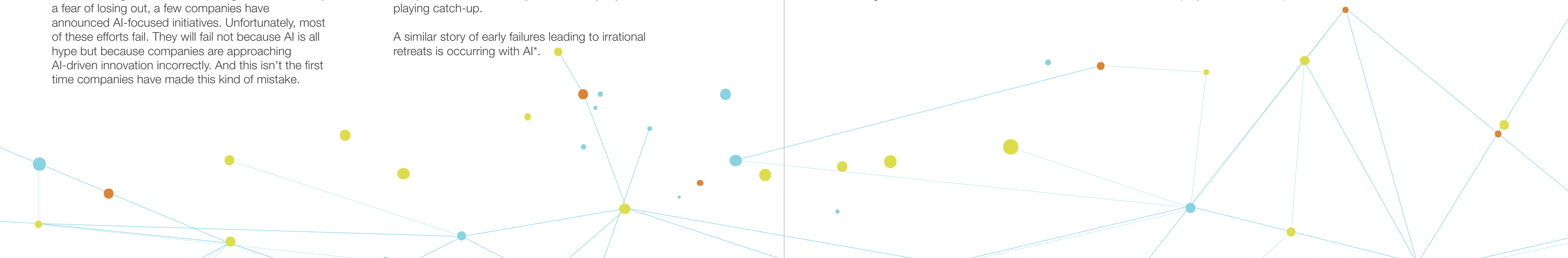
In the mid-2000s, the buzz was about cloud computing. Several companies decided to test the waters. Unfortunately, there were several early issues, ranging from regulatory compliance to security. As a result, many organizations backed off from moving their data and applications to the cloud. The ones that persisted are incredibly well-positioned today, having transformed their business processes and enabled a level of agility that competitors cannot easily mimic. Unfortunately, the vast majority are still playing catch-up.

A similar story of early failures leading to irrational retreats is occurring with AI\*.

# IS AI WORKING FOR YOU?

Our research shows that many companies have run AI initiatives with different vendors but have not achieved anything substantial to solve their business problems. Though the demo was impressive, the project hit a wall at the Proof of Concept (POC) stage because the AI solution did not work for their content! When the cycle was repeated with multiple vendors, they concluded that AI models are not available or mature enough to solve specific M&E business challenges.

The fact is, no M&E client's business problems in their entirety can be solved effectively by anyone AI engine or solution provider in the market. Also, the heavy lifting involving trial and evaluation of multiple vendors rests on the client's overburdened shoulders. But do they have the required data science talent in-house to tweak the AI/ML engine for their enterprise's data model and ensure accuracy and actionability? The lack of adequate expertise also scuttles any in-house project which attempts to build an AI/ML model.



# ARE EXISTING AI SOLUTIONS WORKING?

## Multiple AI Engines – Expensive trials with little results

- Too many AI/ML products not providing accurate results
- Models are not available to solve unique M&E problems precisely
- Too much data and yet very little usable
- Not mature enough to invest in yet

## Expert talent at a premium, generally unavailable – Too little an effort to solve

- Data Scientists with M&E expertise are in acute short supply
- No real expertise in bringing it all together
- Lack of adequate leadership bandwidth in M&E enterprise to focus on solving using AI

M&E leaders rue that business returns have not been significant to prioritize AI/ML highly.

# USUAL EXCUSES FOR NOT ADOPTING AI

“Not for my content.”

“What looked very promising in the demo is not.”

“How do I make the machines learn.”

“Can’t use the data because it is not accurate.”



# SOLVING FOR THE CUSTOMER

To crack the impasse, what is needed is a media recognition AI/ML platform that brings the best-of-breed AI models (Amazon Web Services, Google, and Microsoft) and, most importantly, home-grown models to address the issues of accuracy and actionability. In addition, consulting expertise in deep learning AI with computer vision knowledge is critical to tackling the talent gaps. For AI/ML to deliver for M&E organizations, no cookie-cutter approach will work; what is required is a tailored, bespoke model that embraces the unique data nuances of the client enterprise.

At PFT, we believe that if AI has to work for M&E players, then it has to deliver accurate and actionable data which can solve unique business challenges. For this to happen, solution providers have to be open and committed to working with any AI/ML engine, have the data science talent pool to interpret the data and its subtle nuances, and tweak it to suit the needs of the enterprise's content.

Hence, we offer a combination of Technology and Consulting to seamlessly deliver accurate and actionable data to solve specific M&E challenges.

- **Accurate Data** – This is the only expectation from the industry currently
- **Actionable Data** – We have gone beyond the current expectation to create Action Toolkits to put the data into action!

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**We make AI work for you.  
And that is our promise.**

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## TECHNOLOGY

CLEAR® Vision Cloud is a fusion of home-grown AI engines (over 35 & counting) and best-of-breed AI models enveloped by PFT's unique Machine Wisdom layer. The Machine Wisdom makes a higher-level sense of details identified by the basic AI engines to increase accuracy and actionability. Think of it as an AI platform with a human-like brain (or close to it).

- Offers PFT's own AI models where efficient and effective solutions currently do not exist, bridging the gaps.
- Embraces best-of-breed AI models (AWS, Google, and Microsoft) for each task.
- It has a unique Machine Wisdom layer focused on harnessing the best quality data from the vast amounts of data generated.

## CONSULTING

Along with Technology, PFT offers bespoke strategic consulting services to ensure AI works for the customer, considering their specific business challenges and unique content. Our team performs this by

- Strategic AI consulting on how and where to use AI in business workflows based on our learnings in deploying it for our customers and internal services teams
- Providing suitable learning to the AI models for specific content and business needs
- Altering the models to adjust for the specific nuances
- Conducting experiments to measure the quality of data and sharpening the tools to make decisions





# CLEAR<sup>®</sup> VISION CLOUD AI PLATFORM

PFT's native media recognition AI platform CLEAR<sup>®</sup> Vision Cloud helps solve real-world business problems of TV Networks, Studios, and OTT platforms because of its perfect combination of technology and consulting.

CLEAR<sup>®</sup> Vision Cloud comprises of

- Data Packs
- Action Toolkits

Modular Data Packs include Basic Metadata, Advanced Metadata, Premium Metadata, Video Comparison, Compliance, and Transcripts.

Action Toolkits, as the name suggests, are ready-to-use to address specific M&E use cases. The Action Toolkits include – Segmentation, Discovery, Package Builder, Content Moderator, Language Tools, Video Comparator, and Content QC.

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**CLEAR<sup>®</sup> Vision Cloud  
produces both accurate  
data and actionable data.**

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# CLEAR® VISION CLOUD AI DATA BASIC METADATA

CLEAR® Vision Cloud AI Data Pack – Segmentation and Basic Metadata helps:

## Identify physical video segments

- Blacks, Color Bars, Slates, Pre-caps, Recaps, Montages
- Essence
- Text & Textless segments
- Specific captioned segments
- Custom segments based on customer need

## WHAT DOES THIS MEAN FOR YOU?

- 100% accuracy and 100% frame accuracy in short-form content
- 95-98% frame accuracy in long-form content
- 100% automation of workflows to extract content segments
- Cost and manual effort reduction

# CLEAR® VISION CLOUD AI ACTION TOOLKIT SEGMENTATION

While AI expects to solve for accuracy alone, PFT has gone a step further and tried to solve for actionability. This is how we make AI work for you!

CLEAR® Vision Cloud AI Action Toolkit – Segmentation allows M&E companies to:

- Review and QC automatically identified segments
- Filter out content segments and export EDLs
- Generate a video of the custom segment, stripping out the rest of the physical segments

When a segment or signature is not identified or marked by QC, CLEAR® Vision Cloud Action Toolkit – Segmentation enables automatically learning segment signatures based on QC input.

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**The companies that will succeed with AI are the ones that focus on creating organizational learning and changing corporate DNA\*.**

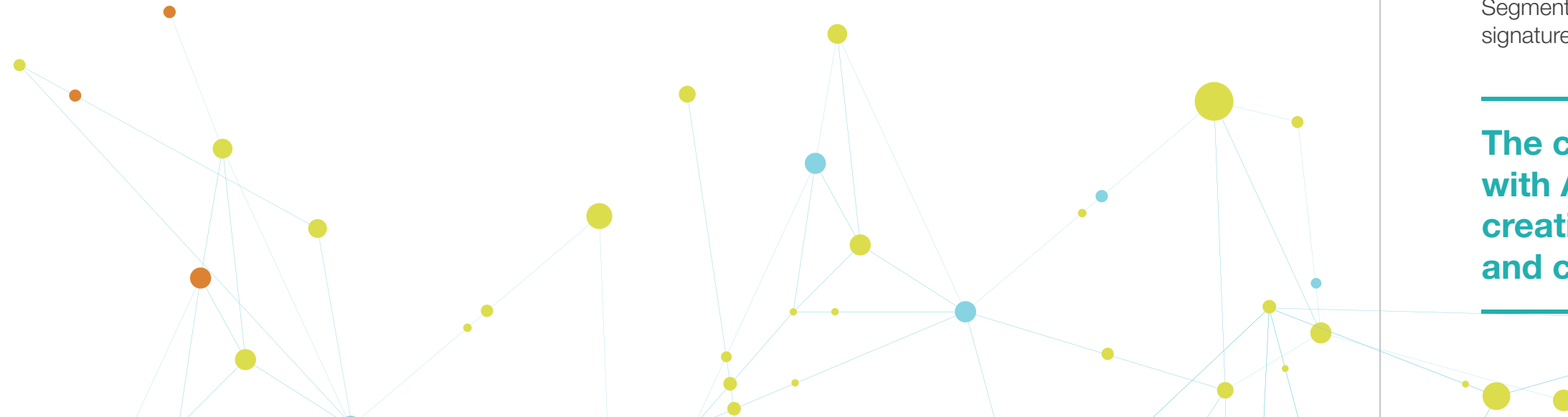
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## WHAT DOES THIS MEAN FOR YOU?

- Reduction of time and cost of segment marking and content segment extraction
- Automatic learning based on QC input is a novel feature and a key differentiator in enabling automation.

## KEY DIFFERENTIATORS

CLEAR® Vision Cloud's ability to frame accurately and identify physical segments at a reduced time and cost makes it a compelling proposition. In addition, automatic learning based on QC input is an industry first and a key enabler in workflow automation.





# SEGMENTATION

## USE CASE

## ELIMINATE PAYOUT ERRORS DRASTICALLY & INCREASE MONETIZATION BY AUTO-GENERATING FRAME-ACCURATE SEGMENTATION METADATA.

Broadcast stations require content producers to follow specific guidelines to identify and mark content segments before submitting their programs and ads for playout. These segments, including blacks, color bars, tones, slates, credits, and recaps, are technical and physical. In addition, the duration of these segments is as specified by the broadcaster. This is a time-consuming, mundane process involving error-prone manual labor.

Developing an AI-enabled segmentation tool that can expedite the process is not easy. The content segments that need to be identified and marked come with noise and variations, and their accurate detection requires deeper cognition and interpretation. Also, the tool has to develop the ability to identify custom segments of a content enterprise. While it saves the operator from having to painstakingly sift through the content and mark the segments by identifying 'time code in' and 'time code out' as they are served automatically, even if a few segments or frames are missed, it requires a QC of the whole process. Hence as crucial as speed is the accuracy of outcomes.

When PFT first deployed the AI-led segmentation tool for Hearst Television, while automation ensured reduction in cycle time thanks to our patented machine wisdom providing comprehensive identification based on visual, audio, and business rules, accuracy was far from 100%. But the good thing is, every time manual QC is performed, CLEAR<sup>®</sup> Vision Cloud learns automatically. This improves accuracy, and over time, Hearst could ensure 100% accuracy in detecting blacks, color bars, and slates and marking these segments in the ad spots at high speed. In addition, the time taken by CLEAR<sup>®</sup> Vision Cloud was just 0.35x – 0.45x, which was 58% lesser than the time taken earlier. PFT also helped Hearst save more than 50% cost by eliminating manual intervention.

In general, for short-form workflows, 100% accuracy, with automation in the range of 95-100%, and in long-form workflows, increased accuracy and automation that enables 80-90% reduction of cycle time and 50%+ in costs have been achieved over some time. In addition, AI-led automation ensures zero errors during playout and offers broadcasters the ability to insert local ads on barter segments leading to increased monetization.

# CLEAR<sup>®</sup> VISION CLOUD AI DATA ADVANCED METADATA

CLEAR<sup>®</sup> Vision Cloud AI Data Pack for Advanced Metadata offers all the features and benefits of Data Pack for Basic Metadata and much more:

- **Integration of well-researched, best-of-breed AI Engines:** One place to get best quality recognitions – Faces, Keywords, Web Associations, OCR, Transcript, Brands, etc.
- Smart frame analysis saving valuable processing time and cost
- **Scene Detection and Clip Generation:** Provides scenes that can be used for promotion purposes, enables contextual Search in clips and identification of logical scene boundaries
- **Probabilistic filtering of discovered metadata:** Less noisy, eliminate low accuracy keywords & findings, and reduces not-so-useful keywords to cut the clutter

- **Compilations:** Auto-curated playlist themes like action clips, romance, explosion, comedy, kissing, police, guns, etc. This makes it ready to consume while building a promo and enables you to export playlists for marketing or syndication purposes
- **Translate & Transliterate:** Auto Translate in the target languages; Search in Natural Languages
- **Custom Keywords:** “YOUR” recognitions – This helps you tune the models to recognize objects of importance for YOU

## WHAT DOES THIS MEAN FOR YOU?

- ONE place to get the best quality recognitions across the industry
- Saves time & cost and secures the best results
- Custom Keywords ensure your specific business use cases are solved.

## KEY DIFFERENTIATORS

- **Machine Wisdom:** CLEAR<sup>®</sup> Vision Cloud offers a unique Machine Wisdom layer that synthesizes discoveries across a wide range of engines and gives data in CONTEXT. This ensures better quality metadata, better than any ONE third party engine's solution, and better than all third party engines' solutions put together because of better discoverability/search-ability

- **Smart Frame Analysis:** Another feature that sets CLEAR<sup>®</sup> Vision Cloud apart is Smart-Frame Analysis, where its Machine Wisdom enables technology to compare the difference between frames before they are processed by downstream engines that reduces roughly 20% in the cost of third party engines and processing time
- **Logical Scene Boundary Identification:** Saves time
- **Smart Playlists:** Playlist clips are pre-cut with metadata suggesting multiple shot boundaries and multiple end-of-sentence boundaries, with audio level classification metadata. This makes it much easier to select and include in manual, semi-automatic & automatic promos and obtain fine transitions across shots in promos.



# CLEAR<sup>®</sup> VISION CLOUD AI ACTION TOOLKIT

## DISCOVERY

When the world is increasingly getting accustomed to the convenience of Google Home and Alexa, why remain stuck with ancient Search? CLEAR<sup>®</sup> Vision Cloud AI Action Toolkit – Discovery is an AI search in Natural Language where one can:

### AI Search for AI Data in Natural Language (like speaking to Alexa) enabled by Machine Wisdom

- Search for actors, objects, labels, dialogues, brands, etc. in combinations, in the exact search string (E.g., Show me “Tom Cruise wearing sunglasses and saying with me, without me”)
- Contextual Search to bring up clips that are most relevant to the search string
- Search in Natural Language (E.g., Show me “Tom Cruise fighting on a plane”)
- Search can accommodate spelling mistakes
- Search can find similar-sounding keywords when the exact match does not exist.
- Search can be tolerant to different forms of words, i.e., an adjective form, rooted form, or other such forms. (E.g., Search for darkness when looking for Darker or Dark as keywords)

- Search can be done with equivalent meaning words (Synonyms)
- Search can be done with potentially alternative words (E.g., Vehicle instead of Car)
- Ability to find the right content in the library, even if the user does not know the exact keywords to look for
- When adjacent clips match the same string, Search merges the clips to provide ONE result to act upon (add it to a clip library for export)

### UI to browse metadata and edit: A comprehensive browse and edit catalog

UI can be used to find content or edit by a professional to improve quality and relevance in a Hybrid model.

- Browse discovered metadata and edit with absolute ease
- Scene marking: Be able to QC and adjust scene boundaries to correct shot boundaries
- Browse the metadata in a hierarchy of Scenes, Clips inside the scenes, Frames inside the Clips

- Edit Faces: Update a name to a face when not automatically detected, and the face is instantly learned across the whole asset. Can add character name to the face as well
- Add keywords and objects that have not been recognized
- Remove wrongly identified keywords with one click
- View a simplified summary of filtered metadata, while the more extensive discovered metadata is still searchable and editable

### Compilations

- Browse curated compilations on a genre basis
- Tenant admin can create custom compilations for their need through a Compilations Editor.
- Clips from playlists can be added to a project from where the content time codes can be exported.
- Enables faster content discovery with themes (time saved)

### WHAT'S IN IT FOR YOU?

- Accurate search & discovery
- Significant time savings

### KEY DIFFERENTIATORS

The AI Search for AI Data in Natural Language offering a seamless B2C experience is a key differentiator in the marketplace for AI solutions serving the M&E industry.

# CLEAR<sup>®</sup> VISION CLOUD AI DATA PREMIUM METADATA

CLEAR<sup>®</sup> Vision Cloud AI Data Pack for Premium Metadata offers all the features and benefits of Data Pack for Advanced Metadata and much more:

## Key Moments Playlists enabled through Machine Wisdom.

- Key Moments are auto-predicted based on our patent-pending algorithms that consider the visuals, audio, actors, scenes, relative importance, positioning, etc.
- Auto identification of Key Moments can be selectively picked for building marketing and promo videos either with the manual, semi-automatic, or automatic process, saving time.
- Enables CLEAR<sup>®</sup> Vision Cloud AI Action Toolkit Customer Package Builder to produce packages with interesting clips/moments

## Key Dialogues Playlists enabled through Machine Wisdom.

- Key Dialogues are auto-predicted from the transcript, including signature dialogues based on our patent-pending algorithms that consider the dialogues, the moment of delivery, relative importance, who delivers them, and a host of other considerations. It also identifies some powerful dialogues based on the rank of the dialogue in content and various other parameters. The Key Dialogues are ranked based on several parameters that include which actors are involved and how important they are to the movie, overlaps with other Key Moments, different playlists, what genre of keywords are present in them, etc.
- **Auto identification of Key Dialogues as part of the playlist** to help build packages or promos either with the manual, semi-automatic or automatic process, saving time
- Enables CLEAR<sup>®</sup> Vision Cloud AI Action Toolkit for Custom Package Builder to produce packages with interesting clips/moments

## Thumbnails enabled through Machine Wisdom.

- Automatically identifies logical thumbnail candidates from across the content and ranks them on the keywords that match synopsis, specific genres, etc.
- Automatically smart crops all the images to create ready-to-use thumbnails tailored for the profiles of social media platforms like Facebook, Twitter, YouTube, Instagram, to name a few.
- Enables a marketing person to use on the go, without depending on the creative agency
- Reduces significant time and effort involved in the process

## WHAT DOES THIS MEAN FOR YOU?

- Saves time
- It enables you to discover and re-use interesting clips, freeing up your resources for higher-value creative work at lesser cost and time.

## KEY DIFFERENTIATORS

Machine Wisdom enabled “auto” features like Key Moments Playlists, Key Dialogues Playlists, and Thumbnails are unique to CLEAR Vision Cloud and not available with any competing AI solution.





# CLEAR® VISION CLOUD AI ACTION TOOLKIT PACKAGE BUILDER

## Build a Promo/Package

- Auto-catalogue and make content discoverable using Vision Cloud
- As a promo producer or editor, Create promo Projects, Re-use, Duplicate, Edit, and Download
- Pick up content from Smart compilations of exciting clips and Search from one or more assets
- Manage the promo package duration
- Handle Transition types and the Transition duration
- A cloud craft editor that enables you to
  - Trim Start and endpoints
  - Re-arrange the storyline
  - Edit and Review
  - Export an EDL or Video (e.g., mp4)

## WHAT'S IN IT FOR YOU?

- Time/ Effort for Search and assembly of promo clips for producers/editors reduces by over 80%
- Producers can quickly create a rough promo cut from the brief and communicate this to the editor.
- Pick up exciting clips from Smart compilations and create engaging playlists for review in no time.
- Create many variations and versions of Promo and get newer ideas looking at smart compilations of Key moments, key dialogs, hero entry scenes, romance, actions, song, dance, etc.
- Basic cloud craft editor that enables you to add transitions, clips, re-arrange of clips, etc.
- The time and effort saved by producers and editors can be used in creative pursuits, thereby improving the quality and variations of the Promos.

*Equally unique is the UI to browse and edit catalog, faster content discovery with themes, and the speedy intuitive creation of promos and packages.*



# MARKETING USE CASE

## LOCATE THE RIGHT CLIPS YOU NEED TO BUILD A VARIETY OF CROSS-PLATFORM PROMO MATERIAL WITH THE HIGH-QUALITY DISCOVERY OF DATA, AUTOMATICALLY.

Promos are necessary to market shows and retain interest and viewership when they are episodic or re-runs. Therefore, no content enterprise can escape the daily rigors of promo marketing. Yet promo development as a creative process remains highly inefficient. Promo editors have to spend copious amounts of time searching through the entire video footage running into hours for the suitable clips to make a line-up and still may miss a few key shots by mere forwards.

Even suggesting that AI can help deliver exciting promos to a creative team is treated as blasphemous. That is because promos are considered short-duration, highly creative, and engaging expressions of the main story's exciting facets even though they follow a specific template like key moments, punch dialogues, effects, etc. Therefore, building an AI-powered promo assist tool that will speed up the process while still offering the promo editor creative freedom is impossible, you would think!

Not really.

AI can auto-generate and rank key highlights, moments, and dialogues. Then, based on input parameters like duration, scene selections, transition effects, and others,

line up a set of shots for the promo editor to re-arrange and lock.

The editor has the power to assemble clips in the order as desired, to fit them in the time frame required, add standard transitions, adjust the time codes of boundaries of the clips selected frame accurately and export them out.

The editor can also search in natural language for more scenes as the ingested content is cataloged. Since the project can be exported to Adobe Premiere Pro, further post activities are also not hindered.

But when PFT deployed the AI-powered promo assist tool internally, getting the right quality natural language search (like a Google search) into the content archive was a big challenge. The machines can now classify and predict interesting clips like key moments, dialogues, and entry scenes that fill up a promo with refinement and learning.

CLEAR® Vision Cloud has built one of the best search solutions into the content archive for the global M&E industry. Automatic identification of key shots is helping save 60-80% of the search time, and with the tool, there is no question of missing any key moments.



# CLEAR® VISION CLOUD AI DATA VIDEO COMPARATOR

CLEAR® Vision Cloud AI Data for Video Comparator allows

- Close to 100% accuracy on Master-Master video comparison
- Finding matched, unmatched, and moved segments
- Close to 100% frame accuracy on comparison
- Matching frames and clips even in the following situations:
  - One Video is edited
  - One Video is zoomed, cropped
  - One Video has green backgrounds
- Comparing color scales
- Comparing texted and text-less

- Conformance from source:
  - Identify up to 3 best matching clips from the source that made it to the Master.
  - Match source clips with green screens
  - Rank the matches
  - Time codes match with a frame accuracy tolerance of less than 1 second on either side.
- Customization to cater to many other re-versioning use cases

## WHAT'S IN IT FOR YOU?

- Near-complete automation of comparing masters
- Subtitle re-timing: Near complete automation on re-timing subtitles after compliance edits and other edits
- DI validation: Near full automation on DI validation
- 90% automation of conformance for Re-mastering

# CLEAR® VISION CLOUD AI ACTION TOOLKIT VIDEO COMPARATOR

CLEAR® Vision Cloud AI Action Toolkit for Video Comparator allows to

- Visually Compare and validate matched, unmatched, and moved video segments
- Download the EDLs of the matched, unmatched, and moved video segments
- Obtain EDLs for added, and cut segments frame accurately to help re-time subtitles
- Review and extract DI validation reports
- Review multiple source matches to Master and extract EDLs for Re-conformance

## WHAT'S IN IT FOR YOU?

- Near full automation of reviewing Master versions and in quick time, increasing efficiencies.
- Near full automation of the generation of DI validation reports
- Instant extraction of Re-conformance EDL to start the Re-mastering process

## KEY DIFFERENTIATORS

While there is near full-time automation integrated with a MAM, use cases like automatic subtitle re-timing is a key differentiator in the marketplace. Similarly, automatic re-versioning/mastering of content from the digitization of tapes is also available only with CLEAR® Vision Cloud.



# CONFORM USE CASE

## AUTOMATICALLY CONFORM REGIONAL EDITS, SUBTITLES & DUB TRACKS ON GLOBAL MASTERS IN A MULTIPLE FRAME RATE BASELINE.

Currently, film and television studios are creating content at 29.97 or 23.97 FPS. They could also have mastered it at 25 FPS with local dubbed audio or the other way around. The audio of the dubbed Master has to be conformed to the source video master to distribute the content. Not just that, the subtitles in one FPS version have to be conformed to the source video master too. And, last but not least, forced narrations have to be identified and exported to a sidecar file in sync with the source video.

Needless to add, conforming audios and subtitles to the source video are highly labor-intensive tasks. Plus, forced narrations in the source have to be identified and translated by professionals before conformance. As much as these are time and effort-intensive, they are highly error-prone too.

However, the good news is AI can help here. An AI-powered video comparator can quickly conform the audio in the regional Master to the source video master. Moreover, it can automatically identify the gaps in audio and forced narration in the regional Master compared to the source video master.

With CLEAR® Vision Cloud, conformance issues flagged are exported for a quick human QC/Edit to finalize and publish. For example, the audio gaps are addressed in dubbing. The forced narration issues are exported to a sidecar file lined up on the subtitle tool within Vision Cloud, and a linguist does a quick QC.

AI helps to significantly reduce the time and effort involved and enhances the accuracy across frame rates. The reduction in time and effort also optimizes the cost of conforming forced narrations. In addition, the high level of automation which ML will bring over some time as the machines pick up the logic can help scale up the conformance activity for a large volume of content.



# CLEAR® VISION CLOUD AI DATA COMPLIANCE

## Identifies potential compliance issues across categories:

- Violence: General, Weapon violence, Graphic, Gore, Self-injury
- Visually Disturbing: Emaciated bodies, Corpses, Hanging
- Explicit Nudity: Nudity, Graphic male nudity, Graphic female nudity, Sexual activity, Illustrated nudity, Adult toys
- Suggestive: Female swimwear or underwear, Male swimwear or underwear, Partial nudity, Revealing attire
- Smoking
- Drinking
- Medical

## Has Advanced Metadata which identifies:

- Logos/Brands
- Celebrities

## Ensures Verbal Compliance

- Identifies cuss words and cuss phrases and marks them

**The compliance metadata does not claim 100% conformance to any compliance standards; however, it offers many benefits.**

### WHAT'S IN IT FOR YOU?

- Automates detection of a set of key compliance issues
- Assists Hybrid models of compliance identification and editing
- Combined with CLEAR® Vision Cloud AI Action Toolkit – Content Moderator delivers higher actionability for compliance overview and compliance edits
- Use of Machine Wisdom to capture compliance issues from various sources and improve accuracy

# CLEAR® VISION CLOUD AI ACTION TOOLKIT CONTENT MODERATOR

- View compliance issues marked on a cloud editor.
- Filter compliance issues, review, edit time codes, delete false positives
- Choose compliance sensitivity levels: Low (can have more false positives, but safer), Mid and High (may miss out weak signals)
- Browse clips with compliance in the catalog section and edit
- Add compliance clips to a project

## Compliance Meter allows you to

- View compliance levels on various issues as a summary for the asset
- View Compliance Meter on what percentage of compliance issues exist in the content for a quick review

## Auto Compliance edits

- Download automated bleep/mute EDLs for verbal profanity at 90%+ accuracy
- Download automated edited videos bleeping/muting verbal profanity

- Download compliance segments EDL
- Download compliance issues stitched as a video for review.

### WHAT'S IN IT FOR YOU?

- Faster compliance detection
- Reduces by 30-40% overall compliance edit times with just bleeps/mutes
- Reduces compliance edit effort on an NLE edit machine after being filtered by CLEAR® Vision Cloud AI Action Toolkit – Content Moderator

### KEY DIFFERENTIATORS

Content Moderator is a unique differentiator in the marketplace. It can significantly enhance actionability for compliance overview, compliance edit and substantially reduce related efforts and resources.

# CLEAR® VISION CLOUD AI DATA TRANSCRIPTS

CLEAR® Vision Cloud AI Data for Transcripts allows you to:

- Transcript content in over 120 languages
  - List of languages supported:  
<https://cloud.google.com/speech-to-text/docs/languages>
  - Automatic punctuation
- Translate content to over 120 languages
  - List of languages supported:  
<https://cloud.google.com/translate/docs/languages>
- Transliterate content from over 100 languages
  - List of languages supported:  
<https://docs.microsoft.com/en-us/azure/cognitive-services/translator/language-support>
- Use Machine Wisdom to synthesize multiple transcription engines to improve accuracy and detection

## WHAT'S IN IT FOR YOU?

- Automatic transcripts enable better Search of dialogues in the content on a scale.
- Enables detection of Key Dialogues
- Enhances efficiencies: Time and cost reduction in Subtitling
- Transliteration enables searching regional language content in English transcript

## KEY DIFFERENTIATORS

Usage of Machine Wisdom to improve transcription accuracy from multiple sources is an industry first and only available with CLEAR® Vision Cloud.

# CLEAR® VISION CLOUD AI TOOLKIT LANGUAGES

This one-of-its-kind AI Action Toolkit allows you to:

- View Transcript in sync with Video
- Edit Transcript where the AI engines get it wrong
- View edited portions highlighted visually in the AI Toolkit – Languages
- Export the Transcript in SRT and VTT formats to enable time sync and finalization of Subtitles

## WHAT'S IN IT FOR YOU?

Gain significant efficiencies in time and cost savings in Transcription, Subtitling and Closed Captioning







# LOCALIZATION

## USE CASE 1

### AUTOMATICALLY GENERATE, TRANSCRIBE, TRANS-CREATE SUBTITLES IN OVER 60 LANGUAGES.

Localization is a laborious and error-prone process necessary to make your content available to audiences worldwide with different language preferences. Subtitle script creation involves transcription/translation, and manually syncing it with Video and Audio consumes time. In addition, at times, due to the poor quality of audio, the subtitle script may get some words or phrases wrong. Spelling and grammar errors while typing the captions are also common.

Building an AI-enabled language transcription/translation tool that can deliver substantial business benefits is an arduous task. And that is because, even if the solution offers 95% accuracy, the captioning specialist has to review the entire process, making the automation redundant as time and cost benefits are nullified. However, with Subtitling in 60+ languages, clients specifying parameters like characters per line, the number of lines and reading speed, and subtitle sync with Video a must, there are quite a few things AI should get right most of the time to make this solution viable.

When PFT deployed the language transcription/translation tool powered by AI internally, it did not initially deliver even 50% accuracy. Our teams pushed back because the AI engine took longer TAT (turn-around time) and made more errors than manual execution. This meant our operators had to spend extra time and effort to QC the AI delivered outcomes leading to natural frustration.

Through integrations with AWS, Google, and Microsoft, and some models built in-house, especially for Indian regional languages, we substantially improved the accuracy of transcripts over some time. In addition, the content processed by CLEAR® Vision Cloud gets preloaded for QC, drawing attention to a text whose confidence is low or where captions are missing. This ensures that even at a 70-90% accuracy, substantial time and cost savings are achieved as the caption specialist does not have to review the entire process manually.

AI-led localization automation allows automatic subtitle generation and time-coded subtitles against each shot, avoiding typing the subtitles. The operator can view content side-by-side and the transcript without the need to toggle between Video and Script. The SRT file generated can be exported to CLEAR® for downstream activities as well.



# LOCALIZATION

## USE CASE 2

### AUTOMATIC SUBTITLE RE-TIMING WITH 100% ACCURACY.

Global syndication through digital distribution is an essential monetization strategy for content enterprises. However, when the content is distributed in different markets across various channels, they often need to undergo specific edits to fit slot duration or align with local compliance parameters. These edits result in subtitles going off sync with the actual dialogues and warrant a re-time coding of subtitles. Unfortunately, subtitle re-timing is a manual process and takes a lot of time to ensure accuracy. As a result, it severely slows down the syndication workflows.

An AI-enabled comparator tool that can compare video frames from source and edited versions accurately is challenging. If the comparator fails to detect time codes of cuts and inserts accurately, it leads to erroneous re-timing of the subtitles.

When PFT deployed the AI-led comparator tool for subtitle re-timing for clients, it did not initially deliver even 50% frame accuracy. This meant a QC operator had to review the entire footage frame by frame for errors and fix them on the CLEAR<sup>®</sup> subtitling tool. In addition, the low level of frame accuracy invariably meant longer cycle time. But as the machines started learning from manual QCs, their ability to compare pre and post edit masters and identify cuts, edits, and inserts frame accurately dramatically improved, leading to much faster automatic subtitle re-timing.

The AI-led comparator can dramatically enhance frame accuracy to near 100% and considerably reduce the re-timing cycle time, leading to better efficiencies and economics.



# CLEAR<sup>®</sup> VISION CLOUD AI DATA CONTENT QC METADATA

Identifies Key content parameters in Promos and matches them against specific data for that Promo version. The set of parameters that it currently validates are:

- House Number (As per On-Air Cue sheet)
- Video Format (For HD and SD File)
- Audio Format (Check Audio Track Info 4 Track or 8 Track)
- Promo Duration (As per On-Air Cue sheet)
- SOM Counter (As per On-Air Cue sheet)
- Versioning Elements - Opener/MS/ES (Spelling, Tune in time, Fonts)
- Show Name & Movie Name Spelling
- Video Safe Frame (For HD and SD File)
- Black Frame Start or End or In-between promo (if creatively ok)
- Sponsor details/Logo & sponsor VO (As per On-Air Cue sheet)
- Tune in Graphic Slate (In-between promo as perversions)

- Audio level (Stereo)
- Audio 4 track (Check on Timeline)
- Bit Rate Format

## WHAT'S IN IT FOR YOU?

- Enhances accuracy of validation and efficiency of validation
- AI will identify and compare against a spec and passes those Promos that match with 100% precision
- AI will highlight those that it is not sure of, erring on the safer side for a manual validation
- Ensures high accuracy to prevent any leakage of errors downstream

## KEY DIFFERENTIATORS

- Usage of Machine Wisdom to deliver 100% precision.

# CLEAR<sup>®</sup> VISION CLOUD AI TOOLKIT CONTENT QC TOOLKIT

The Content QC toolkit enables quick validation of the failures or suggestions from AI and either passes them or fails them.

The manual validation of any failures on the toolkit enables AI to auto-learn, making the data more and more accurate for the day.

## WHAT'S IN IT FOR YOU?

- Quick validation and auto-learning system enabling accuracy

## KEY DIFFERENTIATORS

- 100% precision with no leakage of errors





# CONTENT QC USE CASE

## AUTOMATICALLY QUALITY CONTROLS THE BAG & TAG VERSIONS OF SEVERAL PROMOS DAILY TO DELIVER 100% QUALITY AND PREVENT LEAKAGE IN YOUR ADVERTISING REVENUE.

Every day, a channel runs hundreds of promos to attract viewership for their programming—thousands of promo creative need to be developed and versioned for this. For example, let's assume a channel plays out 200 promos in a week as part of different campaigns. Creating these promos involves versioning that adds 5x assets and localization, another 5x. This would mean manually managing about 5000 AV elements in a week and about 20,000 in a month! It is mind-boggling.

Promo version QC operators have to manually check for parameters like duration, version, channel, sponsor, title info, etc., and identify those that do not meet the specifications, both creative and technical, which editors have to work on to correct. This is time-consuming, with each Promo taking 5-7 minutes and highly prone to errors of omission. Failure to meet some of the parameters like duration and version have a direct impact on monetization too.

An AI-powered promo version QC appliance that can auto-detect all parameters in a promo and flag deviations to a QC editor is more accessible said than achieved. The parameters are many – duration, version, channel, sponsor, title info, tune info, blacks, audio tracks, video tracks, the

start of media, and house number. And if the automated QC does not return 100% accurate results, the manual effort cannot be escaped.

PFT has started deploying this internally to serve client projects. The initial challenge was to ensure that every Promo passed by CLEAR® Vision Cloud should reliably pass without exception. If the AI has an iota of doubt, it should invoke human verification to ensure 100% accuracy to playout. CLEAR® Vision Cloud tuned its engines towards 100% precision, ensuring that only a tiny percentage of promos go for a human review and thereby providing 100% accuracy to play out at much-increased efficiencies.

The AI-powered promo version QC appliance can drastically reduce manual QC time to seconds as the parameters are auto-detected. The dashboard gives complete visibility into promo status. If the promo asset is rejected for a creative or technical reason, the promo version QC editor can work on it within CLEAR® to make the asset good. The cumbersome spreadsheets are now gone. CLEAR® Vision Cloud also ensures no revenue loss for the M&E enterprise as the AI-enabled promo version QC appliance detects "duration" and "version" parameters accurately so ads can be inserted as planned.





# MAKING AI WORK FOR YOU

With a decade of experience in the M&E industry, nobody understands the unique business requirements of content enterprises – broadcasters, studios, production houses, and streaming platforms – as we do. As a result, PFT is working round the clock to solve real-world M&E business problems and build additional use cases to showcase how it can deliver AI-led business outcomes.

Accurate data and Actionable data are the hallmarks of CLEAR<sup>®</sup> Vision Cloud. While other AI models available today in the market can offer data accuracy to some extent, none can present accurate, actionable data.

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**CLEAR<sup>®</sup> Vision Cloud,  
making AI work for you  
today!**

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For more information visit:

**[www.primefocustechnologies.com/vision\\_cloud](http://www.primefocustechnologies.com/vision_cloud)**

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