



# An Advanced Platform for Content Classification



WINN@W is a powerful software for classifying audio-visual content into semantic concepts. WINN@W uses Artificial Intelligence (AI) and Machine Learning (ML) technologies for identification of key elements in content in accordance with regulations in different countries, regions, and organizations.

WINN@W is empowered with advanced classification capabilities to ensure the content is automatically classified using a rule-based framework. WINN@W provides extensive and accurate content management features, which help in improving workflow efficiency.

## Key Features & Benefits

- Builds on Interra Systems' expertise in video quality and image processing
- Powered by AI/ML algorithms implemented using widely adopted TensorFlow framework and state-of-the-art computer vision algorithms
- Focused approach for broadcast workflows
- Classifies audio-visual content based on explicit scenes, violence etc.
  - Explicit & violent content; Presence of guns, belly button, alcohol, drugs, smoking scenes etc.; Strong language in audio
  - Checks content in accordance with regulations of different countries, organizations
- Extracts application specific metadata, such as speech-to-text, visual text, closed captions, festivals, dates, websites etc
- GPU intensive computing for good performance
- Rich set of API support
- Customizable review workflows
- Intuitive UI to visualize WINN@W reports
- Integration with BATON Media Player for analyzing WINN@W Reports
- Available on-premises and in the cloud

## Need for Automated Content Classification

- With streaming media, content gets consumed by a wider range of audiences and regions, making it an imperative to avoid offensive or explicit content based on rules and regulations of different regions for broadcasting
- Creation and distribution of vast amount of content enabled by technology, necessitates a better searching capability
- Manual classification of media content is time consuming, inconsistent and costly

## Automated Solution for Content Categorization

With streaming media services, content gets consumed by wider range of audiences and regions across the world. Different regions have their own broadcasting rules and regulations and content categorization varies with geographical locations. WINN@W facilitates broadcasters to adhere to the classification laws of different countries and to avoid broadcast of any offensive content specific to that region. Relying on user-defined parameters, WINN@W automatically checks and identifies content against regulations in different countries, regions, and organizations.

Due to rapidly changing technology and content globalization, WINN@W has emerged as an efficient and cost effective solution that saves time and allows automated image identification and categorization of media. WINN@W works on rule-based framework and classifies audio-visual content based on explicit scenes, violence etc.



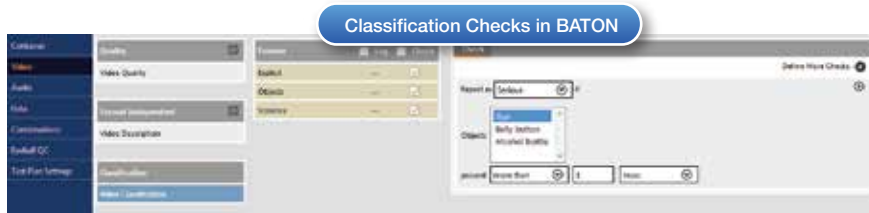
## Applications

- Explicit and violent content detection
- Health advisory concerns (alcohol, smoking)
- Strong language detection
- Content classification (ad classification)
- Copyright protection related applications, such as logo detection
- Detection of audio events, such as emergency signals, bleeps
- Others like Celebrity identification, keyword detection in spoken audio etc

## WINNOW Integration

WINNOW classifies scenes in audio visual content in different categories (like nudity, violence, alcohol, smoking, strong language use). The classification results are then published to the broadcasters in the form of WINNOW reports. The report includes content description, scene/frame wise classification results for different content rating systems.

WINNOW seamlessly integrates with BATON and can be deployed in both, in the cloud and on-premises. WINNOW can be easily integrated using the Test Plan interface of BATON. Various classification checks in BATON, when enabled, will trigger a task in WINNOW. Whenever a task is triggered, WINNOW uses the schemes to classify the content.



WINNOW is designed in such a way that it facilitates integration with third party applications using APIs and smart folders.

## WINNOW Classification Process and Reporting

Once the tasks are triggered, WINNOW analyzes the file and executes the ML algorithms to prepare a content description. WINNOW notifies BATON about task completion through alerts and BATON receives the content description through APIs.

Thereafter, BATON merges the WINNOW report into its verification report.

Video Classification Errors					
#	Severity	Description	Duration	Start	End
1	Serious	Alcohol bottle is present.	410	340	749
2	Serious	Alcohol bottle is present.	353	928	1278
3	Serious	Gun is present.	176	750	925
4	Serious	Gun is present.	169	0	168

Video Quality Errors		
#	Severity	Description
1	Warning	HDR checks are enabled but video with Track Id 1 under Parent Id 0 is not HDR.

Video Preview		
0 (00:00:00:000)	[Error] 0 (00:00:00:000)	[Error] 340 (00:00:11:333)

Enabled by Artificial Intelligence (AI) and build on top of Machine Learning (ML) technologies within the BATON QC platform, WINNOW provides broadcasters with high-performance content classification solution.