SGO

mistika workflows

WHITE PAPER

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1. SYNOPSIS

Built on years of research, development and production experience, **Mistika Technology** has been empowering facilities around the world for more than twenty five years with new levels of creative power, performance and workflow efficiency. As a part of its Multidimensional Workflow Concept, **SGO** has started to slice toolsets of its globally-acclaimed Hero Suite Mistika Ultima to address specific industry needs and develop advanced workflow applications, with **Mistika VR** being the first one. The next one to join the rapidly expanding line-up of Mistika Technology is **Mistika Workflows**, SGO's first dedicated media management, transcoding and delivery application - an all-new and affordable software solution, enabling the creation of standard and user-defined media workflows without any knowledge about programming.

2. COMPANY HISTORY

SGO is a Spanish high-end technology company with decades of experience in developing and integrating high-end post-production solutions. Founded in Spain in 1993, SGO began as a reseller in the digital moving image industry. Due to customer demands, by 1996 the development of the company's flagship product Mistika began. Computer scientist and CEO Miguel Angel Doncel, along with software developers Jose Hernandez, Roman Dudek and other members of SGO's senior development team started to develop the industry's first complete post production solution. Four years later, 'Mistika' was introduced to the market.

An ambitious and entrepreneurial company, SGO had the ingenuity and foresight to realize the potential of the resolution revolution coupled with the industry's digitalization and so in 2001 the first application in the motion picture industry transpired. Mistika introduced the first complete post solution for conforming, color grading, visual effects and finishing, at tremendous speed, offering real-time performance all in one system which resulted in Mistika playing a lead role in many groundbreaking industry firsts.

SGO has dramatically evolved over the years as a result of listening and learning to it's highly regarded customers. SGO's customer centric approach is what allows the company to remain different to its competitors and technologically evolve at the pace it does; it's philosophy continues to be rooted in listening to the market and fulfilling customer needs. This is why in 2016 SGO introduced its **Multidimensional Workflow** Concept with the aim of addressing specific Industry needs by developing advanced Natively-Integrated software-only solutions. The first one was **Mistika VR,** an optical flow stitching solution that in just two years has become an industry standard with thousands of active users across the world.

In addition, **Mistika Boutique** was released in April 2019, being derived from the globally acclaimed hero-suite Mistika Ultima. Available as a single application that provides a completely scalable, truly interactive and totally resolution independent full-finishing software solution for Windows and macOS - exclusively available on a subscription basis through the online SGO Shop.

Over recent years, SGO has received many client requests which have been less related with Mistika functionalities itself, but much more associated with external workflow challenges, with the lack of automation being one of the main bottlenecks of many productions. This gave SGO the reason for designing an all new product to meet these demands but still built on the foundation of Mistika Technology. **Mistika Workflows** is an affordable software solution created to revolutionize the way content deployment and other media processing tasks are done by automating and facilitating many inefficient and tedious workflows.

3. GLOBAL INDUSTRY CONTEXT AND COMMON TECHNICAL ISSUES

The demand for highly efficient content production is experiencing exponential growth around the globe and consequently new delivery standards have become a requirement, especially from the major on-demand providers such as Netflix, Amazon and HBO. This, in turn, creates challenges in the entire media content production chain – not only with color correction and VFX but also in quality control, final content delivery and distribution.

Most media companies would like to rely on highly automated content production workflows from the initial ingest to the final delivery. However, repetitive human interventions are typically still needed across the whole process, becoming a production bottleneck and a 'factory' of mistakes.

Despite the fact that hardware and software resources for workflow automation have become more powerful than ever, the most common technical issues in the vast majority of media production companies are still closely related to content production workflows. It often feels that they have the right tools for each independent department, but problems emerge when trying to connect all the pieces together in a comprehensive whole, especially to finish the production and create final deliverables without errors and crucially on schedule.

Typically, in busy media companies, engineers with the appropriate technical skills often don't have the time to design, implement and maintain automation tools. In addition, most media automation solutions available on the market are specifically designed to be set-up and used on a daily basis by these skilled and valuable resources.

However, this was not the case in the past, but with the finishing tools becoming less complex and much more easy-to-use, many engineers were replaced by more creative and less technical profiles over the past ten years. This increased productivity on the one hand, but also escalated bottlenecks in communication between different applications and departments, especially when creating final deliverables.

Additionally, traditional deliverables have evolved into something much more complex, into a huge collection of heterogeneous files and metadata coming from different departments

and applications needed to be reorganised, reprocessed, packed with different subtitle files, promo images and complex XML files, transcoded to many different formats, copied to different places and uploaded somewhere. Adding to the complexity, most of the delivery standards are changing every year and are often different for every client.

4. INNOVATIVE SOLUTION: MISTIKA WORKFLOWS

SGO's first dedicated media management, transcoding and delivery application, **Mistika Workflows** is far from being the typical IT tool, normally only accessible to engineers because of their complex integration. Due to its easy-to-use interface Mistika Workflows is specifically designed to be used by all industry professionals with various skill levels, enabling highly efficient, truly productive and fully customized media content production.

Being a multi-platform application, running on Linux, Windows and macOS, Mistika Workflows is designed to facilitate media file related workflows, including a state-of-the-art transcoding engine, specialized data transfers and triggering user-defined actions or scripts to make media content-production pipelines easier, smarter and faster.

Understanding the current situation within the Audiovisual Industry described in the previous paragraph, gave SGO firm pillars on which they designed the revolutionary Mistika Workflows:

- **Available for ALL** - To address the *"few engineers - many creative users"* tendency accordingly, non-technical users need to be able to design and implement their own workflow nodes and take care of the day-to-day usage of workflow automation applications, while engineers should only be responsible to help the users when they need to set up a particularly complex technical node. Mistika Workflows is designed bearing this in mind, offering a genuinely intuitive and customized nodal user interface with GUI elements matching the typical Edit, VFX and Finishing interface that creatives use on a daily basis.

- **Intuitive Graphic Representation** - Mistika Workflows provides its users with greater control of automated or user-created pipelines by displaying the workflow in multiple graphic representations. This provides an easy way to detect and then correct any possible errors that would cause failure of the desired result.

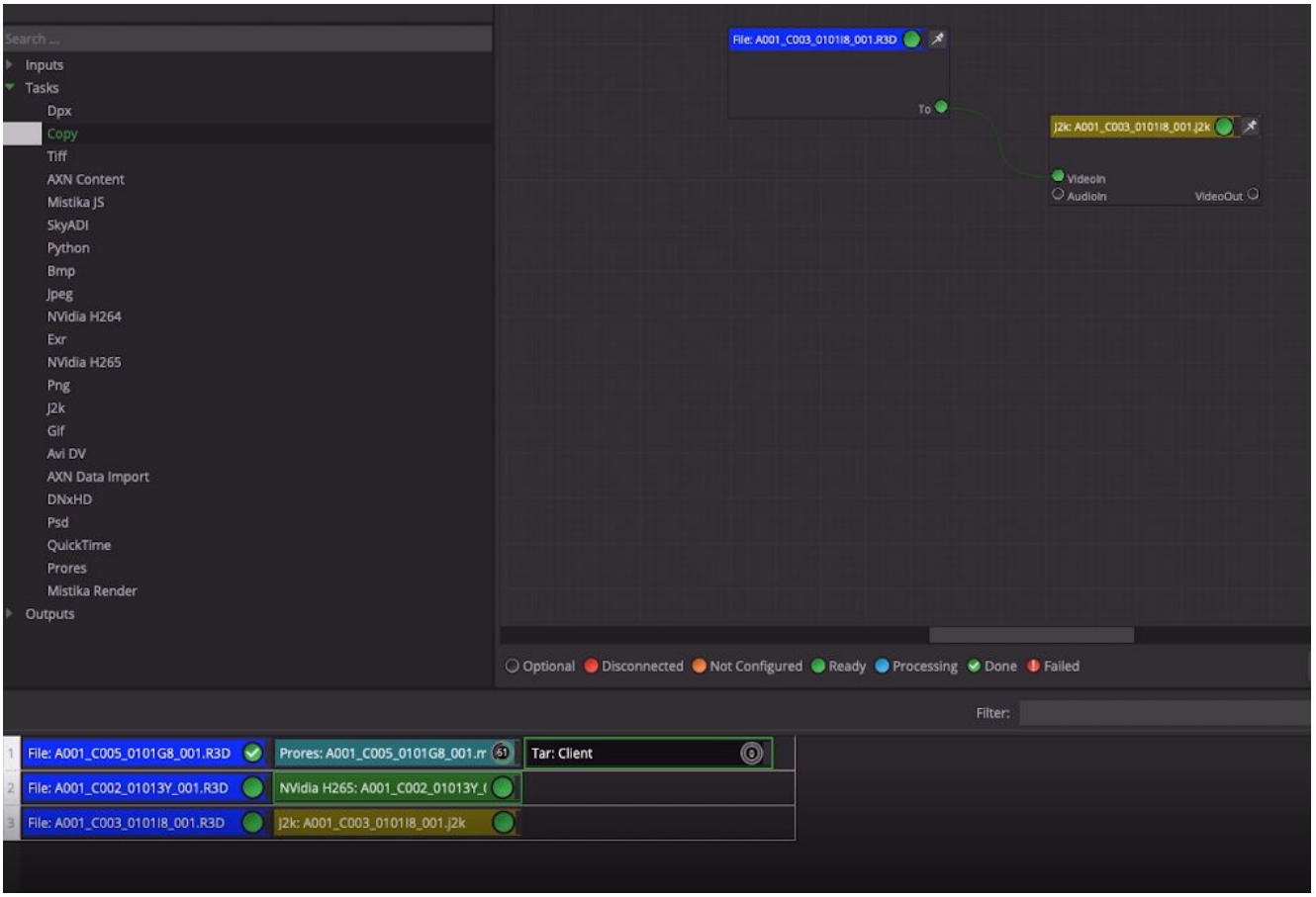


Image 4.1: Mistika Workflows GUI showing the Input/Task/Output panel on the left hand side, main canvas in the center with two simple nodes and workflows overview in the bottom of the image. On the image can also be seen how Mistika Workflows graphically represents the status of each workflow and task.

- **Smart Nodes** - Mistika Workflows Smart Nodes are capable of recognizing common mistakes that can occur throughout the whole content production chain, such as render with an inappropriate codec settings or file names not matching specifications. This enables early detection of mistakes and prevents their propagation in the entire task chain. Once the mistakes are resolved, the workflow can easily be relaunched, without losing any data.

  These smart features together with intuitive graphic design permits users to track the workflow, immediately fix possible mistakes and resolve problems without breaking the established workflow requirements at any point as the integrity of the specifications are fully enforced at each node and no single step will continue until the right terms are fully meet. This does not mean that the workflows are rigid and

permanent; It just establishes clear separation between specification design and user administration.

- **One platform connecting different profiles** - To build truly efficient and powerful workflows, Mistika Workflows is meant to connect technical staff with creative users. Offering an extensive and growing collection of the most common media processing nodes, Mistika Workflows also enables engineers and programmers to develop their own customized task nodes.

- **Open Architecture** - **Mistika Workflows** open architecture permits the addition of custom-built features by creating new tasks using Python programming language, providing their users with total control over the platform and allowing them to fully customize its behaviour for the client-particular needs. Python nodes can be created quickly, without most of the complexity of independent applications.

  Using the Python scripts allows automating repetitive tasks while adapting necessary aspects like file-naming rules, URL paths and communication with asset management databases or metadata files. Additionally, **Mistika Workflows** can act as a "glue" between different applications, by 'calling' them with command line parameters or by reading and creating custom metadata files using the Python scripting. Python also provides excellent capabilities for integrating with websites and cloud services. When combined with the support of multi-platform operating systems, **Mistika Workflows** results in a truly powerful, revolutionary tool for media workflows automation.

- **Modern Color Workflow Management** - One of the common bottlenecks and another reason for unresponsive and slow adoption of the traditional workflow automation tools is the lack of quality and completeness in terms of Color Management that has to be designed as a comprehensive whole. The old concept of a transcoding application is no longer valid and has to be substituted by smart and workflow-aware automation tools to connect independent applications consistently and provide full control of color and metadata transcoding that need to be included coherently in every production stage up to the final deliverables without breaking the metadata chain. This is specifically important for Color Management Workflows by the latest industry standards, including ACES pipelines, HDR metadata management, multi-mastering and versioning, the integration with production databases and client

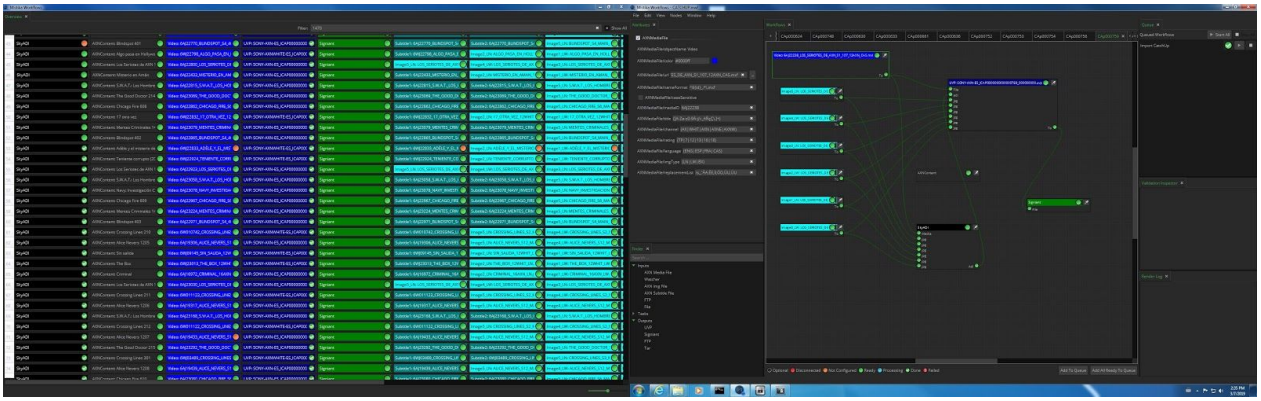
metadata files.

- **Incredible Speed** - Thanks to GPU processing, advanced CPU parallelisation and Mistika Technology unique performance optimizations, Mistika Workflows achieves incredible transcoding speed at the highest possible quality. Mistika Workflows also supports the most complete set of industry-standard camera RAW formats including ARRI, Canon, RED, Sony and even 360º cameras. Additionally, Mistika Workflows enables seamless automation for encoding and data moving as a whole with the data mover feature. Example capabilities are file copy over the network, tar compression, FTP transfers, Aspera and Signiant uploads.

- **Advanced Implementation at an Affordable Price** - Mistika Workflows is an affordable software solution based on a pay-per-use business model with flexible payment options from just Euro €49 a month. Mistika Workflows is a software-only solution and can be used on any hardware configuration, meaning no hardware investment is needed.

- **High-skilled Technical Support** - Mistika Workflows comes with various levels of renowned SGO Support, meaning the end-user can simply ask for help and, if applicable, SGO engineers would provide a solution via Remote Sessions.

5. MISTIKA WORKFLOWS: CLIENT SUCCESS STORY



Mistika Workflows highly scalable and open architecture provides infinite options for its implementation and personalized use depending on the needs of a company or production. A good example to explain the innovative and customizable aspects of this solution is a success story about two SGO clients: Sony Pictures Entertainment Iberia (S.L.U) and SKY. Each company employs different asset management systems that needed to be totally integrated and their delivery workflow fully automated. This was achieved successfully with Mistika Workflows and works as follows:

- First node in the workflow launcher imports a spreadsheet with the program scheduling, containing all the program names, transmission dates and all the necessary metadata. This node imports all the metadata and automatically creates task chain for each program. All these workflows run simultaneously in parallel and the user can follow the evolution of each program workflow independently in a visual graph with intuitive icons and easy-to-understand messages. Due to this efficiency, engineers are not needed on a daily launch of the workflow.

- The task nodes on each workflow collect all the required media and complementary folders, including subtitle directories and metadata files. It then recombines and transcodes the media to the required delivery codecs, while also transferring files across Sony Pictures Entertainment Iberia facilities. This action triggers complementary render processes that will automatically produce icons and promotional images as per the pre-defined specifications while assuring that the Color Science parameters are coherent and maintained across all the transcoding tasks.

- The final delivery nodes automatically produce an XML delivery file containing all the metadata accordingly to SKY specifications, pack everything into a zip style delivery file, upload it to SKY Signiant Server and send corresponding email notifications to the workflow managers.

- Each of the tasks described above is represented graphically, being constantly updated to show its current status: what nodes have been successfully executed, which ones are pending and which tasks could not be completed, accompanying them with a clear message explaining the exact reasons for error and what has to be done to fix it.

- Since implementing Mistika Workflows, Sony Pictures Entertainment Iberia successfully delivers up to 800 pieces of content a week. This increase in efficiency and total dependability is achieved by only one person supervising all the pre-defined workflows each morning on a part-time basis.

6. CONCLUSION

Most of the existing media automation systems are workflow locked and anchored to traditional pipelines. They have good support for the typical codecs used by broadcasters and the connectivity with their usual media servers. However, they typically cannot keep up with the massive media market transformation and advanced connectivity being only available on enterprise systems with elevated hardware and support costs.

Conversely, Mistika Workflows is a truly affordable solution for all, designed for flexible pipelines with excellent support for demanding formats that are becoming mainstream. Combined with a truly open Python interface integrated within the core of the application for customized connectivity, this makes Mistika Workflows the perfect tool for defining workflows that are changing and evolving on a daily basis.