GIS GLOBAL INKJET SYSTEMS

A NANODIMENSION DIVISION

Atlas IQ® Tools

Image optimisation for your digital printing

Atlas Image Quality (IQ) Tools from GIS are a comprehensive software solution to optimise digital print performance

GIS works closely with its customers to optimise digital print performance. Now GIS brings its market-leading expertise to the suite of Atlas IQ software tools for image quality measurement and optimisation.

Minimise Defects

- Missing lines due to nozzle failures
- Nozzle-to-nozzle density variation
- Poor colour reproduction
- Grainy images
- Printhead-to-printhead banding

Tools

- Missing nozzle compensation
- Nozzle density compensation
- Ink channel linearisation and colour correction
- Screener selection and optimisation
- Printhead registration alignment

Uses

- As independent tools within your current system
- Fully integrated with the Atlas Professional software platform
- Alongside software tools from GIS partners or third parties

Including Atlas IQ Tools on your digital printing press will enable your customers to optimise print quality and achieve superior print performance

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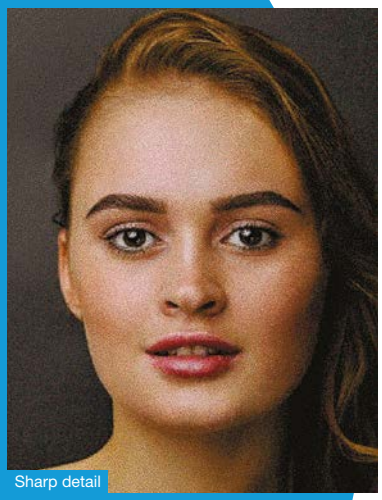
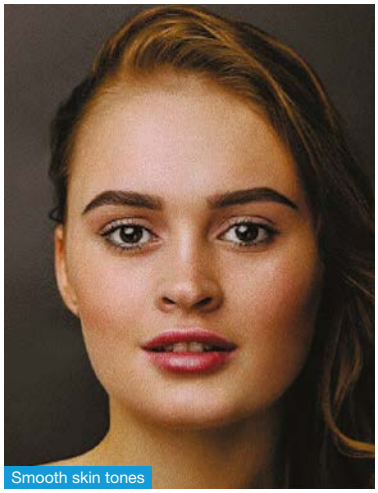
Atlas IQ® Tools

Screener Optimisation

Ultra-fast binary and greyscale screeners are crucial to achieving the best image reproduction for the type of image being printed, allowing the best image quality conversion of contone images to produce smooth grey-level transitions while maintaining sharp line detail when working with a limited number of printhead grey levels.

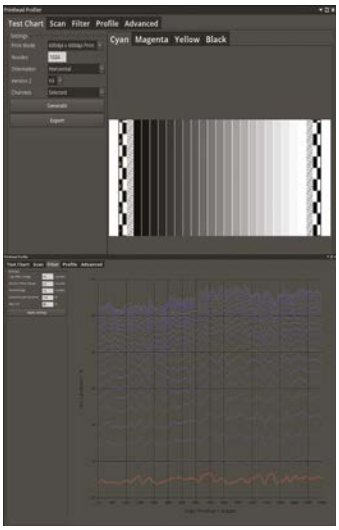
GIS Screeners are the most optimised screeners on the market, allowing for inline RIP-on-the-fly to maximise press usage and profitability for the press operator. Once the screener type has been selected, the screener is optimised to achieve a smooth contone to grey-level mapping, full greyscale dynamic range and ink limiting.

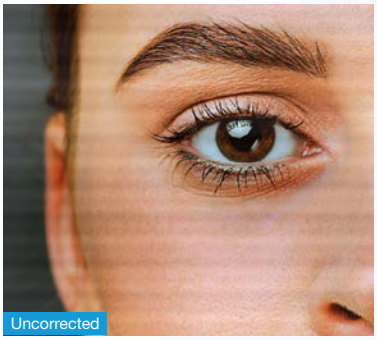

Sharp detail

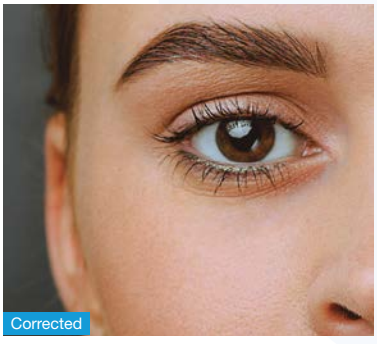

Smooth skin tones


No anti-aliasing


With anti-aliasing




Uncorrected


Corrected

Nozzle Density Compensation

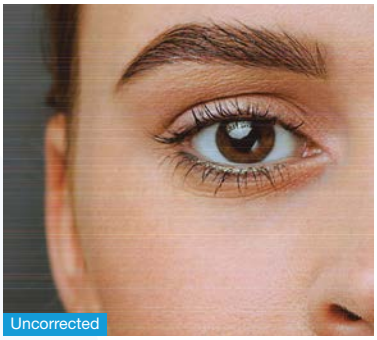
Nozzle Density Compensation adjusts every pixel in the original image with the aim of producing the same output print density for the same input density of the original image for every nozzle.

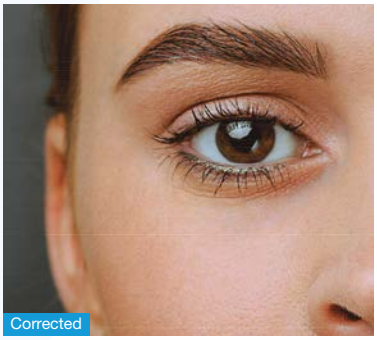
The application of the GIS Printhead Profiler image correction software can be tightly integrated with the screener software to achieve the fastest correction possible and maintain the highest possible performance of the datapath from original image file to printed output.

Missing Nozzle Compensation

Missing Nozzle Compensation reduces the visibility of missing nozzles. It is tightly integrated with the screeners to maintain optimal performance. In an ideal world all printhead nozzles would be perfect; however, due the size and number within a printhead this is often not the case. Misalignment of or even blocked or damaged nozzles can be masked by software, thereby removing the tell-tale faint lines or missing lines in the final printed image.

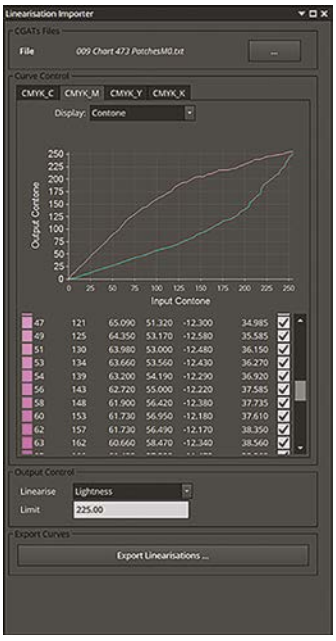
Missing Nozzle Compensation allows for neighbouring nozzles to be adjusted to compensate for those issues, thus significantly reducing the visibility of these artifacts and giving the impression that all nozzles are active.





Channel Linearisation

Channel Linearisation needs to be performed on each process colour channel. This is achieved by printing individual channel linearisation test charts, measuring the printed charts with a densitometer resulting in the linearisation correction such as CGATS.



Channel Linearisation is typically completed together with Colour Correction profiling.

Colour Correction

Colour Correction profiling ensures that when process colour channels are used together, they accurately represent the intended output colour, as the combination of the process colours and laydown order can significantly affect the resulting printed output colour. As with Channel Linearisation, colour test charts are printed, and spectral measurements are made to calculate colour profiles such as the International Colour Consortium (ICC) profiles.

The linearisation and colour profiling processes are typically completed together. Each print mode (resolution, grey level, process colours, screener type, substrate, and print speed) will most likely need unique Channel Linearisation and Colour Correction profiles which are then applied to every printed image.

Colour Correction profiling is typically completed together with Channel Linearisation.

Colour Registration

Colour registration is critical to accurate colour and repeatable colour reproduction and general image quality. GIS has a range of tools for printhead alignment that can be implemented during system configuration or dynamically during printing. Applications not only include colour channel registration but also additional varnish registration on pre-printed substrate.

About GIS

GIS provides software, electronics and sub-systems for industrial print systems

Atlas® Software Suite

The Atlas Software Suite is a platform for the rapid development of industrial inkjet user interface and machine control systems. It enables rapid integration of software components from GIS to create entire digital print systems covering workflow, RIP, VDP, drive electronics, ink delivery systems, transport control and subsystems. Atlas Professional and Production User Interfaces have been developed specifically for system builders and end users.

Atlas can control a complete machine or act as a component in larger systems. Its unique modular and open design allows you to customise, as well as to integrate additional tools to enable a quicker route to market for your product.

Drive Electronics

GIS Drive Electronics offer comprehensive, high performance and flexible datapath solutions, supporting a wide range of printheads from major manufacturers including Epson, Fujifilm Dimatix, Konica Minolta, Kyocera, Ricoh, SII Printek, Toshiba Tec and Xaar. GIS also runs a continuous development programme to support new printheads.

GIS electronic design and quality components provide exceptional waveform generation, monitoring and digital control of printheads – delivering world class productivity, print quality and system reliability.

Ink / Fluid Delivery Systems

The supply, monitoring and control of inks and fluids is a vital factor in maintaining digital print quality. Ink / fluid pressure, temperature and flow rates need to be kept stable to ensure a consistent quality print from startup to shutdown.

GIS offers all the necessary components – including electronics, software, header tanks and pressure control systems – for your ink / fluid delivery system.

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