What is G7+®?

G7+ is a new and improved calibration specification that augments legacy G7® with completely new logic and algorithms but similar overall appearance. G7+ is designed to work equally well with all printing technologies and offers increased value and effectiveness for a wider range of markets and applications while preserving the value of existing G7 workflows. G7+ maintains the features, benefits, and general appearance of G7 but with more accurate gray balance, improved tonality, and better performance in unusual printing conditions.

What is the benefit of G7+?

G7+ enhances the legacy G7 methodology, which now serves as the baseline for several widely adopted print and color global standards, to provide optimal color alignment across traditional commercial print, packaging, and new digital print technology and workflows for consistency across all print production processes. Since its introduction in 2005, G7 has revolutionized the ease, quality, and efficiency of most 4-color printing methods, including offset, flexo, toner, and gravure. G7+ is optimized to:

- Provide more increased ICC profile accuracy, especially in high-density inkjet printing and richly saturated colors.
- Provide a consistent neutral print density across print production, including low dynamic range systems like textiles, newsprint, and industrial printing.
- Factor in SCCA (Substrate-Corrected-Colorimetric Aims) for gray balance compliance.

What is the difference between G7 and G7+?

- A completely new tonality algorithm maintains legacy G7 tonality at typical commercial offset (e.g. GRACoL® 2013) ink levels, but improves pictorial appearance on low-contrast media such as textiles, thin papers, absorbent board, etc., with slightly lighter and more natural contrast, especially in flesh tones.
- There is virtually no visible difference between G7 and G7+ on typical commercial print production and proofing systems.
- G7+ gray balance uses the same CMY triplets as G7 but a more technically sound gray balance algorithm that delivers an improved "shared neutral appearance" and a more visually neutral appearance on strongly colored substrates.
- Where SCCA processing may affect gray balance in G7 datasets, G7+ gray balance is completely unaffected by SCCA. This is important when adapting a standard dataset like GRACoL to different substrates.
- G7+ verification and QC aims and tolerances, like those required for G7 Master printers are enhanced beyond those of G7.

What types of printing will see the most improvement with G7+?

- Users of very high-density ink-jet printers with 6 or more inks should see smoother tonality in highly saturated colors, where G7 calibration can lead to undesirable contrast or banding. This improvement will result in more accurate ICC profiles and more photo-realistic images without color management.
- Similar benefits should be seen by printers who use thin or absorbent substrates, such as web offset and textiles, where gray balance and tonality in dark shadows are typically unstable or muddy. Low-density printing applications should also notice slightly lighter and more pleasing tonality, especially in flesh tones.

What does G7+ mean for me as a brand or print buyer?

- G7+ is an improved calibration specification that enhances the benefits of G7 at a technical level, without introducing major appearance changes in traditional packaging and print workflows.
- If your work with leading G7 Master printers includes inkjet, wide-format, textiles, newsprint, and industrial printing, you may see better color through better control of high-density printing and richly saturated colors. More natural contrast, especially in flesh tones may also be noticed with updated tonality algorithms for color calculation during file separation and ICC color management.
- Some proofing target values and verification procedures may change slightly; otherwise, G7+ should not impact your print specification or buying trends.
- Your current G7 print providers will become G7+ Master facilities, depending on their current G7 Master qualification period.

What does G7+ mean for me as an OEM?

- G7+ is an updated methodology for printing system calibration that can be implemented into DFEs, RIPs, and anywhere color management is controlled. G7+ will provide traditional print and emerging/new technologies such as inkjet, DTG, and other lower dynamic range output with a more robust method to control output and maximize gray balance and color accuracy and consistency.
- Current G7 System Certifications continue to be honored and will continue to be available to align with the current G7 CGATS/IDEALLIANCE TR015 specification. These certifications will remain in good standing until the next available renewal cycle. G7+ System certifications will be available later this year (timing subject to change).
- Software and hardware developers can write their own calibration or verification code or license a ready-made SDK.

Will I need new software, files, or hardware to accomplish G7+?

- G7+'s new gray balance, tonality, and verification algorithms may require new or updated calibration and verification software. Consult your technology provider for details. Certified G7+ solutions will be made available by industry technology providers following the launch of G7+ in March 2024.

Learn more at www.printing.org/g7plus

- Existing measurement devices may be used with G7+ software, but devices with built-in G7 functions will likely require at least a G7+ firmware update. Consult your technology provider for details. Certified G7+ solutions will be made available by industry technology providers following the launch of G7+ in March 2024.
- G7+ uses the same calibration and verification target files as G7, such as the P2P51, IT8.7/5, ISO 12647-7 Control Wedge, etc., but specifies different metrics, aim values and tolerances.

I'm already a G7 Expert, why should I become a G7+ Expert?
- G7+ will offer more tools for better color control across all print technology. G7+ will be leveraged for traditional commercial and packaging print to new global standards and will also now help manage color on substrates where relative color aims using SCCA are required. Non-traditional applications will also benefit from more accuracy in ICC profiling and optimization of the full dynamic range, especially with lower-density printing.
- Updated certification will also empower existing G7 Experts to convert to the new G7+ methodology to stay ahead of the curve and serve print service providers and other members of the print supply chain.
- Your G7 Expert certification remains valid until its expiration date (two years from the date it was earned). G7 Experts have the option to renew their existing certification as G7 Expert for an additional two-year cycle. Or, G7 Experts can take advantage of the opportunity to upgrade their renewal status to the new G7+ Expert certification.
  NOTE: If you obtained your initial G7 Expert certification between August 1, 2023, and March 12, 2024, you will automatically receive a complimentary upgrade to G7+ Expert certification.

I'm already a G7 Master Facility, why is it important to become a G7+ Master Facility?
- Similar to the benefits available to G7 Experts, G7+ will provide G7 Master printers the ability to better control color with optimized ICC profiling strategies, better control of color in high density and highly saturated output conditions and media, better results when using SCCA to adapt G7+ datasets to new substrates, and better control of color output where print technology and applications limit the available dynamic range.
- Updated certification will allow existing G7 Master Facilities to use the new G7+ methodology to maintain their status as leaders in print, packaging, and graphic communication production, and to continue serving leading print buyers to the highest possible standards.
- Currently qualified G7 Master Facilities will continue to be honored, and G7 Master Qualification will continue to be offered. G7+ Master Qualification will become available later this year (timing subject to change.). Existing G7 Master Facilities have the option to upgrade to G7+ Master Qualification immediately or following a grace period for renewal after the launch of G7+ Master Qualification.

Will globally recognized G7+ certification be available?
G7+ Certification will become available in March 2024 for certified G7+ Experts, G7+ Master facilities, and G7+ Systems. Details for individual, facility, and system-based G7 certification can be found below.

G7 and GRACoL already drive my print production, what does this mean for me as a printer?
- For commercial offset or flexo printers currently targeting GRACoL, G7+ will have little or no impact. G7+ calibration looks virtually identical to legacy G7; the difference is smaller than the variation within a typical press run.
- Existing GRACoL CMYK images will look almost identical on a G7+ calibrated press and should not need to be converted.
- Existing GRACoL-targeted G7 press curves can usually be used with G7+, although re-calibrating or confirming the existing curves is recommended.
- A properly managed GRACoL-targeted press or proofing system should adhere to G7+ metrics with either none or very small adjustments.
- A new enhanced GRACoL dataset adhering to the optimized G7+ methodology will be released in conjunction with G7+ and can be used interchangeably with, or as a replacement for, GRACoL 2013.
- The main difference is that the 300% CMY patch is no longer aimed at 0 a*, b*, but now preserves a small fraction of the substrate color, calculated automatically by G7+ support software. However, the difference is smaller than the normal drift throughout a typical press run.
- The other main difference is that the HR_cmy patch (50, 40, 40) is no longer aimed at exactly half of substrate a*, b*, but will include a small fraction of substrate color. However, as with the 300% CMY patch, the difference is smaller than the normal drift throughout a typical press run.
- New G7+ Expert training will be available starting in May 2024 to support the transition to the optimized G7+ methodology in print production, color management, and workflows. Established G7 Experts are also encouraged to join training focusing on the transition from G7 to G7+.

What is the impact on international standards such as CGATS.21 / ISO 15339?
- Because G7+ makes small changes to higher- and lower-dynamic range offset printing, the existing CRPCs in ISO 15339 will differ slightly from the G7+ specifications, with the greatest difference in CRPCs 1, 2, and 3. The smallest difference will be in CRPC6 (GRACoL 2013).
- The legacy CGATS.21 CRPCs will be augmented (not replaced) by G7+ versions. These will be developed and launched with the support of the Print Properties Committee.
- Note that despite differences between G7+ and G7, images and files based on legacy ISO 15339 CRPCs or profiles should look very similar when printed on a G7+ device, without modification. Legacy G7 images can be printed with normal ICC color conversions if absolute accuracy is required.

More detail on G7+ Certification: G7+ Expert Certification FAQ | G7+ Master Qualification FAQ | G7+ System Certification FAQ

Learn more at www.printing.org/g7plus