~~ISO /TC 130 N 4985~~

~~Date: 2023-07-30~~

~~ISO/TS 10128:2008(E)~~

~~ISO /TC 130 /WG 3~~

ISO/DTS 10128

ISO/TC 130

Secretariat: ~~–~~SAC

~~Graphic technology — Methods of adjustment of the colour reproduction of a printing system to match a set of characterisation data~~

~~Élément introductif — Élément central — Élément complémentaire~~

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Graphic technology — Methods of adjustment of the colour reproduction of a printing system to match a set of characterization data

Technologie graphique — Méthodes d'ajustage de la reproduction de couleurs d'un système d'impression pour correspondre à un ensemble de données de caractérisation

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Foreword

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This document was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This second edition cancels and replaces the first edition (ISO–/TS 10128:2009), which has been technically revised. ~~The main changes compared to the previous edition are as follows:~~

~~Addition~~The main changes are as follows:

- ~~—~~ addition of colour tone value (CTV) as a measure of printed tone~~;~~;
- ~~—~~ ~~Addition~~addition of colour-optimised correction curve set method for press calibration~~, and~~;
- ~~—~~ ~~Updates~~updates to the Introduction and Bibliography.

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Introduction

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Today, with digital data input, it is recognized that modification of that digital data can be used to compensate (adjust) for some of the differences in press, ink and paper between various printing sites and between the actual conditions at a specific site and the reference or standard printing condition.

As part of the introduction of digital technology, the printing industries (and its standards activities) have established reference characterization data corresponding to various printing specifications and conditions. Characterization data is generally defined as the relationship between the CMYK digital input values (in the data file exchanged) and the measured colorimetric values for the colour printed in response to these values.

Four general methods have been identified by which compensation for differences in printing conditions can be accomplished. Three of these make use of individual one-dimensional transforms (also known as plate curves) for each printing channel but differ in the method by which these transforms are determined. These are referred to as matching of tone value curves, use of near-neutral scales and colour optimised correction curve sets. The fourth method makes use of multi-dimensional transforms such as International Color Consortium (ICC) device-link profiles.

The features and general methodology for use of these adjustment techniques is the subject of this ~~Technical Specification.~~ document. The goal is to provide a common understanding of these procedures across the industry, to allow consistency between implementations, and to facilitate communication of the adjustments used/desired in particular workflows.

It must be recognized that these are not competitive solutions, but each have different strengths and weaknesses in individual workflow applications. It is the choice of the individual print facility and/or the involved trade associations to decide how to best apply these capabilities, made possible through the use of digital data.

The basic assumption behind the use of characterization data and these correction techniques is that a printing process can be repeatedly restored to a prior printing condition and that condition can be maintained both within a run and between runs. A variety of process control methods can be used to achieve this repeatability. Solid ink density and tone value increase based on the specific materials involved, and tied back to the conditions established during characterization, are common process control tools that are used in addition to the data adjustment techniques described in this document. These adjustment techniques work together with process control to achieve the printing quality desired.

~~**Patent statement**~~

~~The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning recalibrating a multi-colour imaging system given in 4.3.~~

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