

## Development of a Technical Report: Comparison between ISO and CIE

process name	process owner	process members	document created	ISO stage & vote rule	CIE stage & vote rule
NWIP	CB	TCMs CIE:DD	NWI	10 2/3	1 2/3
assign of WG/TC	CB	BA+TCC	WG/TC assigned	20 –	3 –
development WD & Ballot	TCC	TCC+TCMs	WD of TCMs	30 2/3	5 U
development CD & Ballot	TCC	ISO+TCMs CIE+DD+DE	CD	40 2/3	7 2/3,U?
development DIS/ED & B.	CB	TCC+TCMs +CB	ISO/DIS CIE/ED	50 2/3	9 2/3
development FDIS/AD & B.	CB	TCC+TCMs +CD	ISO/FDIS CIE/AD	60 Y/N+C	11 Y/N+C
publication of TR	CB	TCC	ISO/TR CIE/TR	70 –	12 –

Abbreviations: TR Technical Report, TC(C, M) Technical Committee Convener (Chair) or Member, WD/CD Working or Committee Draft, DIS/ED and FDIS/AD Enquiry or Approval Draft, U Unanimous vote CB ISO or CIE Central Bureau, BA CIE Board of Administration, DD/DE CIE Division Director/Editor.

seen by public (to buy) seen by parent committee seen only by committee

EE000–1A

## Technical Problems to write standard documents in the field of colour vision and image technology

**Problem:** For example the standard organisations ISO, CEN, DIN, and CIE use *antialiasing software*. This software is *incompatible* with the EPS-vector graphic of the software *Adobe Illustrator*. However, this image software is used since 20 years in standard documents. How to revise these ISO documents?

**Table 1: Development of the ISO standard ISO 9241-306:2018. Quality with vector or pixel graphic, and without or with antialiasing software.**

ISO document	graphic software	file size Word PDF	antialiasing software	possible magnification	remarks quality
ISO/DIS 9241-306:2017	vector graphic	2MB 4MB	No	16x	very high quality
option used in secretariat	vector graphic	2MB 4MB	Yes	16x	colours disappear 1)
ISO IS 9241-306:2018	pixel graphic	60MB 15MB	Yes	1x	very low quality 2)
DIN print 9241-306:2018	pixel graphic	– –	Yes	1x	not acceptable 3)

- 1) about 30% of the colours disappear; 2) the output is defined by the software, and not by the vision properties of users.
- 3) 4 of 16 grey steps are not distinguishable. The minimum requirement is failed.

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EE000–3N

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Some existing problems for **visibility, readability, resolution, and colour** are listed. A solution shall maintain the former high quality of ISO standards. If the *antialiasing software* is necessary then it shall be *compatible* with EPS vector graphic.

Many problems show the PDF document N1581 of ISO TC159/SC4/WG2 *Visual Display Requirements*. Many colours of three 16 step colour scales between white and RGB disappear on page 36. The Word document with EPS graphic shows all colours as intended.

**Solution 1:** The vector graphic files are transferred to pixel graphic files and are included in the Word file.

### Disadvantages:

1. The test results of ISO standards for *Visibility, readability and resolution* are determined by the pixel software and not by the colour vision properties of users.
2. For example the word file size of ISO 9241-306 increases from 3 to 60 MB. This is not accepted by the email servers of standard organisations.

**Solution 2:** ISO 9241-306:2018 is published in pixel graphic (low quality). ISO-test charts in vector graphic are for download from the *ISO Standard Maintenance Portal*. Therefore the test quality of ISO 9241-306:2009 remains, see <http://standards.iso.org/iso/9241/306/ed-2/index.html>

EE000–2A

## References and access to archive-web sites with navigation Basic References

- [1] CIE Toolkit for Technical Work, see <http://www.cie.co.at/technical-work/technical-resources>
  - [2] ISO What delegates and experts need to know <https://www.iso.org/publication/PUB100037.pdf>
  - [3] ISO How to write standards <https://www.iso.org/iso/how-to-write-standards.pdf>
  - [4] K. Richter, 2016, How to find public Web Pages with broken links [http://farbe.tu-berlin.de/WBM\\_find\\_PFs\\_16.pdf](http://farbe.tu-berlin.de/WBM_find_PFs_16.pdf)
- WBM access to public CIE documents until 2017**  
 Navigate for Reports of CIE D1: Meeting (MR), Activity (AR) [http://web.archive.org/web/2017062403105/http://div1.cie.co.at/?i\\_caid=544](http://web.archive.org/web/2017062403105/http://div1.cie.co.at/?i_caid=544)  
 Navigate for Reports of Meeting (MR), Activity (AR), Reportership (RR) [http://web.archive.org/web/20160406200138/http://div1.cie.co.at/?i\\_caid=544](http://web.archive.org/web/20160406200138/http://div1.cie.co.at/?i_caid=544)  
 List of more than 300 CIE documents: [http://web.archive.org/web/\\*http://files.cie.co.at/](http://web.archive.org/web/*http://files.cie.co.at/)
- WBM and direct access to public BAM documents until 2010**  
<http://web.archive.org/web/20061116034852/http://www.ps.bam.de/index.html>  
**Most content of this BAM web site has been transferred in 2018 to:**  
<http://farbe.li.tu-berlin.de/A/index.AE.html>

**WBM access to public ISO/IEC JTC1/SC28 documents until 2006**  
[http://web.archive.org/web/\\*http://www.jbmia.or.jp/sc28docs/j28n](http://web.archive.org/web/*http://www.jbmia.or.jp/sc28docs/j28n)  
[http://web.archive.org/web/\\*http://www.aetech.com.br/sc28/](http://web.archive.org/web/*http://www.aetech.com.br/sc28/)

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