INTERNATIONAL ORGANISATION FOR STANDARDISATION

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC1/SC 29/WG 3**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC 29/WG 3/M66537**

**January 22, 2024**

**Source: AHG on Font Format**

**Status: Contribution to the 14th SC29/WG3 (MPEG Systems) Meeting**

**Title: Report of the AHG on Font Format**

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# Ad Hoc group mandates

1. Review the text of the updated Working Draft of ISO/IEC 14496-22 5th edition (WG03N0933).
2. Review the content of the “Technologies under consideration for ISO/IEC 14496-22 5th edition Open Font Format” document (WG03N01081), work on developing and finalizing specification changes to accommodate larger character sets and new features, prepare an updated input contribution and provide recommendations for the WG3 on how these changes should be integrated in the “Open Font Format” standard.
3. Explore potential future changes and updates and propose new items (if applicable) for consideration in the 5th edition of the OFF specification.

# Input Contributions for this meeting

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| --- | --- |
| m66537 | Report of the AHG on Font Format |
| m66095 | Opt-out mechanism for “sfnt” checksums |
| m66260 | Proposed OFF changes to accommodate larger character sets and to add new features |
| m66525 | Proposed revisions to ISO/IEC 14496-22 5th Edition Working Draft (WG3/N1017) |

# AHG Activities

* + - * The “Technologies under consideration for ISO/IEC 14496-22” document (MDS23265\_WG03\_N01081) was published on Oct. 22, 2023. In the time that followed since the WG3 meeting in Geneva, the AHG conducted active discussions that have been focused on reviewing and finalizing proposed new features and changes to overcome the 64K glyph limit without breaking backward compatibility between new and legacy implementations.
      * The AHG had two Zoom meetings where updated proposals were discussed – the first AHG Zoom meeting on Aug. 17, 2023, and the second follow-up Zoom meeting on Sep. 27, 2023.
      * AHG F2F/Zoom hybrid meeting (Aug. 17, 2023) summary report.  
        *1. Overcoming 64K glyph limit – proposed changes:*

- Introduce new 'MAXP' table tag duplicating both table versions (0.5 and 1.0) and updating data fields as necessary (considering the outcome of any additional discussions we may have);

- We will not deprecate GSUB contextual substitutions (type 5 and type 7).

- On glyph substitutions: while the number of glyphs in a ligature won't be affected by increased number of glyphs within a font, the number of possible ligatures and glyph substitutions may increase as a result of glyph limit increase. Coverage tables can become quite large - we discussed and agreed that certain counts and offsets need to be revisited (potentially changing coverage / classdef offsets from Offset24 to Offset32 data type.

- Font collections: in order to enable the use of new / hybrid fonts as part of a collection, we agreed to introduce two new TTC header formats bumping their minor versions to .1 and adding two new fields "numFonts" and "tableDirectoryOffsets" in each header format.

- COLR table: future changes to accommodate a larger number of base glyphs would be needed. As an interim solution, in order to enable the use of a larger number of components we agreed to introduce a new PaintFormat.

- Cubic outlines / control points: while discussing flags (bit 7) we agreed that unnecessary constraints can be removed allowing the bit7 flag to be set on both off- and on-curve points. In addition, the current specification is too concise and may need to clarify runtime behaviour.

- Variable composites: this section will be moved out of the GLYF table into a separate VARC table. to be drafted and presented for review and offline discussion by the end of this week (before or on Dec. 15).

*2. Working Draft updates:*

- Previously discussed and agreed changes for representative instance and condition value proposals have been introduced in the last revision; there are additional changes needed to address technical issues in the Condition Table specification (2nd paragraph, see comment in the WD text). Peter C. will review the spec changes that were introduced as part of OT 1.8.4 / 1.9 updates and prepare an input contribution to address this and other portions of the OFF.

*3. Extra topics:*

- We discussed the possibility of making CPAL optional to allow having COLR table without CPAL;

- There was a brief discussion of a prior attempt to introduce 'dmap' (as in delta 'cmap') table for use in TTCs.

* + - * + AHG Zoom meeting (Sep. 27, 2023) summary report.

*1. On "Beyond 64K glyphs" proposal (submitted as m66260):*

The AHG reviewed and approved the proposal in general, with few pending updates to be completed before the input submission deadline. Among more substantial changes, we agreed that:

- 'dmap' table description would be removed from the current proposal. It needs more work and will be discussed separately as part of the next AHG meeting to be held after the upcoming SC29/WG3 meeting;

- new datatypes introduced as part of the VARC table description need to be added in the updated "Data types" subclause 4.3 - an additional section in the current proposal will address these changes;

- additional investigation and changes may be necessary (e.g.: BASE table, etc.) - to be discussed at the next AHG meeting.

*2. On "Opt-out mechanism for “sfnt” checksums" proposal (submitted as m66095):*Accepted in principle.  
*3. On "Feature Variations”:*- New Feature Variations proposal would benefit from additional discussions - we agreed to continue the discussion at the next AHG meeting with the goal to come to a resolution and review proposed spec updates at the next AHG meeting, before the WG meeting in April.

*4. New clarifications and editorial changes (submitted as m66525):*The AHG was made aware of multiple public comments on Microsoft’s OpenType specification that offer useful corrections and clarifications. These changes will be presented to the WG meeting in attempt to synchronize the updates between OFF and OpenType.

# AHG Recommendations

The AHG recommends accepting the proposed updates and republishing the updated version of the Working Draft text of the 5th edition of ISO/IEC 14496-22 making it available for public review.