Floreat, Inc.
Embedded Multimedia and Communications Software

T.30E Color Fax Protocol Software

The Annex-E of the ITU-T T.30 Recommendation is implemented for the transmission of continuous-tone (multi-level) color and gray-scale images for Group 3 and Super G3 fax operation.

It enables the efficient transmission of high quality, full color and gray-scale images over the PSTN and other networks. The images are normally obtained by scanning the original sources with scanners of 200 pels/25.4 mm or higher and bit depths of eight bits per picture element per color component or higher.

The encoding methodology for continuous-tone (multi-level) images is based on the JPEG ITU T.81 image encoding standard. The JPEG image coding method includes both a lossy mode and a lossless mode of encoding. This annex adopts the lossy mode of encoding which is based on the Discrete Cosine Transform.

The representation of color image data is based on Recommendation T.42. It adopts a device-independent color space representation, the CIELAB space that allows unambiguous exchange of color information.

This annex explains the procedure for negotiation of the capabilities for transmission of continuous-tone color and gray-scale images. It specifies the definitions and the specifications of new entries to the Facsimile Information Field of the DIS/DTC and DCS frames of Recommendation T.30.

Information is specified pertaining to image digitization resolution (in bits/pel), sampling ratio of color components, JPEG capability, color capability, and image data scaling that is subject to negotiation in the pre-message phase of the T.30 protocol.

The technical features of encoding and decoding the continuous-tone color and gray-scale image data are described in Annex E/T.4. It describes two modes of image encoding (lossy gray-scale and lossy color) which are defined using Recommendation T.81.

Floreat's fax modem protocols are modular, re-locatable and re-entrant to support multi-channel capability. This protocol software can operate within a multi-tasking environment or as a single task and it is supported on various DSPs and processors as well as offered in fixed and floating point C.

Floreat's Fax Modem protocols can be integrated with Floreat's other data modem, telephony, speech compression, VoIP, FoIP, imaging and video software for various applications.

Floreat supports its software on the following DSPs, Controllers and Processors

- TI C5000 and C6000
- Intel Pentium fixed and floating point and XScale
- ADI Blackfin (BF53x), SHARC 21xxx
- ARM 7/9/9E, MIPS
- PowerPC, STM, SuperH cores, Philips Nexperia
- CEVA (formerly DSPG's licensing division)
- Ported by customers to their processors:
  - NEC
  - STM
  - Zilog

- For further information on the standard, please click **ITU Standards**.
- For our brief profile, please click **Company Profile**.
- For further inquiry, please send us an **Inquiry Form** or send an email to **info@floreatinc.com**.

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