INTERNATIONAL TELECOMMUNICATION UNION

ITU-T H.263

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STANDARDIZATION SECTOR
OF ITU

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TRANSMISSION OF NON-TELEPHONE SIGNALS

VIDEO CODING FOR LOW BIT RATE COMMUNICATION

ITU-T Recommendation H.263

(Previously "CCITT Recommendation")

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FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation H.263 was prepared by ITU-T Study Group 15 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 19 th of March 1996.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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SUMMARY

This Recommendation specifies a coded representation that can be used for compressing the moving picture component of audio-visual services at low bit rates. The basic configuration of the video source coding algorithm is based on Recommendation H.261 and is a hybrid of inter-picture prediction to utilize temporal redundancy and transform coding of the remaining signal to reduce spatial redundancy. The source coder can operate on five standardised picture formats: sub-QCIF, QCIF, CIF, 4CIF and 16CIF.

The decoder has motion compensation capability, allowing optional incorporation of this technique in the coder. Half pixel precision is used for the motion compensation, as opposed to Recommendation H.261 where full pixel precision and a loopfilter are used. Variable length coding is used for the symbols to be transmitted.

In addition to the basic video source coding algorithm, four negotiable coding options are included for improved performance: Unrestricted Motion Vectors, Syntax-based Arithmetic Coding, Advanced Prediction and PB-frames. All these options can be used together or separately.

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