

## Title (en)

METHOD AND APPARATUS FOR LOW BIT RATE TRANSMISSION OF A SPEECH SIGNAL USING CELP CODING

## Publication

**EP 0481895 A3 19920812 (FR)**

## Application

**EP 91402774 A 19911017**

## Priority

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## Abstract (en)

[origin: EP0481895A2] The invention relates to a method for low bit rate transmission of a digital speech signal. <??>The coding is effected by linear prediction driven by codes in order to generate a code signal, a wave form being represented by an initial vector (O) of dimension L, from a filter for synthesis by a reference wave form selected from among a dictionary of reference vectors (v), with a minimum deviation criterion  $\min ||x-H.v||^2$ , x representing a target vector by perceptual weighting of the initial vector (O). A dictionary (Y) factorised as a product of base vectors  $y_i$  of n-ary form, corrected by a scale factor  $\gamma_i$  of distribution of the excitation energy, and of a dictionary G(y) of gains  $g_k$ , are established in order to represent the dictionary of the reference vectors (v),  $v_k, i = g_k. \gamma_i. y_i$ . The criterion is established by calculation of  $C(g_k, \gamma_i) = 2 g_k \langle x | H. \gamma_i \rangle - g_k^2 \langle H. \gamma_i | H. \gamma_i \rangle$  formed by the scalar products and perceptual energies. To the initial vector (O) is attributed the optimal reference vector  $v_{k^*}, i^* = g_{k^*}. \gamma_{i^*}$  represented only by the index values  $k^*, i^*$ . <??>Application to coding and transmission of speech at a low bit rate by ternary or n-ary vectors. <IMAGE>

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- [XP] WO 9113432 A1 19910905 - UNIV SHERBROOKE [CA]
- [A] EP 0379296 A2 19900725 - AMERICAN TELEPHONE & TELEGRAPH [US]
- [A] ADVANCED IN SPEECH CODING (IEEE WORKSHOP ON SPEECH CODING FOR TELECOMMUNICATIONS, Vancouver, 5 - 8 septembre 1989), pages 145-156, Kluwer Academic Publishers, Dordrecht, NL; R.A. SALAMI: "Binary pulse excitation: a novel approach to low complexity CELP coding"

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