



NEW CLAIMS

1. An analogue signal coding system comprising sampling and digitising means for obtaining digitised signal samples, a master codebook containing a plurality of sequences of excitation signal samples, filtering means for deriving filtered sequences of excitation signal samples from the master codebook, characterised in that the analog
5 signal coding system comprises decomposing means for decomposing either a sequence of digitised signal samples or filtered excitation signal samples into a number of mutually orthogonal component sequences, comparing means for comparing mutually orthogonal component sequences with a sequence of digitised signal samples to provide difference signals if the orthogonal component sequences are derived from the filtered
10 sequences of excitation signal samples and for comparing mutually orthogonal component sequences with the filtered sequences of excitation signal samples to provide difference signals if the orthogonal component sequences are derived from the digitised signal samples, and means for determining from the difference signals which sequence of the plurality of sequences of excitation samples is the most acceptable sequence of
15 excitation samples in complying with a predetermined error criterion.
2. A system as claimed in Claim 1, characterised in that the system comprises storage means for storing filtered sequences.
3. A system as claimed in Claim 1 or 2, characterised in that the system comprises further decomposing means for decomposing the sequence of digitised signal
20 samples into orthogonal component sequences if the orthogonal component sequences from the decomposing means are derived from the filtered sequences of excitation samples or for decomposing the filtered sequences of excitation sequences into orthogonal component sequences if the orthogonal component sequences from the decomposing means are derived from the sequence of digitised samples.
- 25 4. An analogue signal coding system comprising sampling and digitising means for obtaining digitised signal samples, a master codebook containing a plurality of sequences of excitation signal samples, filtering means for deriving filtered sequences of excitation signal samples from the master codebook, characterised in that the analog signal coding system comprises decomposing means for decomposing the filtered
30 sequences of excitation samples into a number of mutually orthogonal component



sequences, means for forming at least two slave codebooks by storing for the plurality of sequences of excitation samples the corresponding orthogonal component sequences in the slave codebooks, at least two comparing means each for comparing a sequence of digitised signal samples and the mutually orthogonal component sequences stored in the
5 respective slave codebooks to provide difference signals and means for determining from the difference signals which sequence of the plurality of sequences of excitation samples is the most acceptable sequence of excitation samples in complying with a predetermined error criterion.

5. A analogue signal coding method comprising sampling and digitising an
10 analogue signal for obtaining digitised signal samples, deriving filtered sequences of excitation signal samples from a master codebook comprising a plurality of sequences of excitation samples, characterised in that the analog signal coding method comprises decomposing either a sequence of digitised signal samples or filtered excitation signal
15 samples into a number of mutual orthogonal component sequences, comparing mutually orthogonal component sequences with a sequence of digitised signal samples to provide difference signals if the orthogonal component sequences are derived from the filtered sequences of excitation signal samples and for comparing mutually orthogonal
20 component sequences with the filtered sequences of excitation signal samples to provide difference signals if the orthogonal component sequences are derived from the digitised signal samples, and determining from the difference signals which sequence of the plurality of sequences of excitation samples is the most acceptable sequence of excitation samples in complying with a predetermined error criterion.

6. A method according to Claim 5, characterised in that half length filtered sequences are compared with half length sequences of the digitised signal.

25 7. A method according to Claim 5 or Claim 6, characterised in that the filtered sequences are decomposed into orthogonal component sequences, and wherein sets of these mutually orthogonal component sequences are stored separately.

8. An analogue signal coding method comprising sampling and digitising an
30 analogue signal for obtaining digitised signal samples, deriving filtered sequences of excitation signal samples from a master codebook containing a plurality of sequences of excitation signal samples, characterised in that the analog signal coding method comprises decomposing the filtered sequences of excitation samples into mutually

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orthogonal component sequences, forming at least two slave codebooks by storing for the plurality of sequences of excitation samples the corresponding orthogonal component sequences in the slave codebooks, comparing a sequence of digitised signal samples and the mutually orthogonal component sequences stored in the respective slave codebooks
5 to provide difference signals, and determining from the difference signals which sequence of the plurality of sequences of excitation samples is the most acceptable sequence of excitation samples in complying with a predetermined error criterion.

9. A decoding system for obtaining an analogue signal comprising a master codebook containing a plurality of sequences of excitation samples, filtering means for
10 deriving filtered sequences of excitation samples from the master codebook, characterised in that the decoding system comprises decomposing means for decomposing the filtered sequences of excitation samples into sets of mutually orthogonal component sequences and means for obtaining a combined sequence by forming a weighted sum of the mutually orthogonal component sequences in response to an incom-
15 ing coded signal, and means for transforming the combined sequence into an analogue signal to provide a synthesised replica of a previously coded analogue signal.

10. A decoding method for obtaining an analogue signal, comprising deriving from a master codebook containing a plurality of sequences of excitation samples filtered sequences of said excitation samples, characterised in that the decoding method
20 comprises decomposing the filtered sequences of excitation samples into sets of mutually orthogonal component sequences and obtaining a combined sequence by forming a weighted sum of the mutually orthogonal component sequences in response to an incom-
ing coded signal, and transforming the combined sequence into an analogue signal to provide a synthesised replica of a previously coded analogue signal.

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