CLAIMS

1. A method of concealing a lost audio frame of a received audio signal, the method comprising:

- extracting a segment from a previously received or reconstructed audio signal, wherein said segment is used as a prototype frame in order to create a substitution frame for a lost audio frame;
- transforming the extracted prototype frame into a frequency domain representation;
- performing a sinusoidal analysis of the prototype frame, wherein the sinusoidal analysis involves identifying frequencies of sinusoidal components of the audio signal;
- changing all spectral coefficients of the prototype frame included in an interval M_k around a sinusoid k by a phase shift proportional to the sinusoidal frequency f_k and the time difference between the lost audio frame and the prototype frame, thereby involving time-evolution of sinusoidal components of the prototype frame, up to the time instance of the lost audio frame, and retaining the magnitude of those spectral coefficients;
- changing the phase of a spectral coefficient of the prototype frame not included in any of the intervals related to a region around the identified sinusoids by a random value, and retaining the magnitude of that spectral coefficient; and
- performing an inverse frequency domain transform of the phase adjusted frequency spectrum of the prototype frame thereby creating the substitution frame for the lost audio frame.

2. The method according to claim 1, wherein the identifying of frequencies of sinusoidal components further involves identifying frequencies in the vicinity of the peaks of the spectrum related to a used frequency domain transform.

3. The method according to claim 2, wherein the identifying of frequencies of sinusoidal components is performed with higher resolution than the frequency resolution of the used frequency domain transform.

4. The method according to claim 3, wherein the identifying of frequencies of sinusoidal components further involves interpolation.

5. The method according to claim 4, wherein the interpolation is of parabolic type.

6. The method according to any one of claims 1-5, further comprising extracting a prototype frame from an available previously received or reconstructed signal using a window function.

7. The method according to claim 6, further involving an approximation of the window function spectrum such that a substitution frame spectrum is composed of strictly non-overlapping portions of the approximated window function spectrum.

8. A decoder configured to conceal a lost audio frame of a received audio signal, the decoder comprising a processor and memory, the memory containing instructions executable by the processor, whereby the decoder is configured to:

- extract a segment from a previously received or reconstructed audio signal, wherein said segment is used as a prototype frame in order to create a substitution frame for a lost audio frame;
- transform the extracted prototype frame into a frequency domain representation;
- perform a sinusoidal analysis of the prototype frame, wherein the sinusoidal analysis involves identifying frequencies of sinusoidal components of the audio signal;
- change all spectral coefficients of the prototype frame included in an interval M_k around a sinusoid k by a phase shift proportional to the sinusoidal frequency f_k and the time difference between the lost audio frame and the prototype frame, thereby time-evolving sinusoidal components of the prototype frame, up to the time instance of the lost audio frame, and retaining the magnitude of those spectral coefficients;
- change the phase of a spectral coefficient of the prototype frame not included in any of the intervals related to a region around the identified sinusoids by a random value, and retain the magnitude of that spectral coefficient; and
- perform an inverse frequency domain transform of the phase adjusted frequency spectrum of the prototype frame thereby creating the substitution frame for the lost audio frame.

9. The decoder according to claim 8, wherein the identifying of frequencies of sinusoidal components further involves identifying frequencies in the vicinity of the peaks of the spectrum related to a used frequency domain transform.

10. The decoder according to claim 8, wherein the identifying of frequencies of sinusoidal components of the audio signal further comprises a parabolic interpolation.

11. The decoder according to any of the claim 8 - 10, further configured to extract a prototype frame from an available previously received or reconstructed signal using a window function.

12. The decoder according to claim 11, further configured to approximate the window function spectrum such that a substitution frame spectrum is composed of strictly non-overlapping portions of the approximated window function spectrum.

13. A receiver comprising a decoder according to any one of claims 8 - 12.

14. Computer program comprising instructions which when run by a processor causes the processor to perform a method according to any one of claims 1- 7.

15. A computer program product comprising a computer readable medium storing a computer program according to claim 14.