A method of syntactic text steganography based on modification of the document-container aprosh

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Text steganography includes syntactic methods, that do not affect the semantics of a text-container and linguistic methods, which are based on the equivalent transformation of the text while preserving the semantic content of the container.

One of the main issues of creating of a text document is choosing the type of font, its style and size, and determining of the requirements for the density of symbols in the row and on the page. The style of the document-container for embedding of a secret information depends on the used aprosh - the distance between adjacent letters or other font parameters [1]. The proposed method is based on a modification of the aprosh when embedding a secret message into a container.

Aprosh value changing relative to the base value a_0 (set by the MS Word processor by default) for a short distance (point fraction) does not cause visual compaction ($\Delta a_t < 0$) or rarefaction ($\Delta a_t > 0$) of symbol groups. Such a change is made with a certain step (discretely) Δa_t, each value of which is assigned a certain bit or a certain combination of bits. In the text processor MS Word aprosh can take values in the range from 0 to 1584 points (pt). When using the different aprosh value (both positive and negative) from 0.1 to about 1 pt it is impossible to notice visually without careful analysis.

A feature of this method is the possibility of a one-time placement (in an aprosh of one text symbol of a container) of the number of bits determined by the discrete difference between the minimum and maximum values of Δa. For example, if the count is taken from Δa_{min} to the set interval Δa_t in the form of the parameter $0{,}1 \cdot n$ (pt), then the number of conditional discrete units n, presented in binary form, determines the number of bits that can be placed thereby.

When using this method, there is no need to use "reference" symbols (benchmarks), i.e. those that will later (by extracting of an embedded, secret information) use as samples. The use of “reference” symbols is provided by other methods based on the modification of the geometric or spatial parameters of the text-container [2,3].

The selection of the symbols of the container for the emdedding of a secret message can be performed on the basis of the following principles:

1) locally;
2) random (pseudorandom);
3) random (pseudo-random) with memory.

References

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