Chapter 2

Background Information and Research

2.1 Steganography

2.1.1 History of Steganography

The term "Steganography" comes from the word "Steganographia", the title of a series of three books by the German abbot Johannes Trithemius [36]. While the books appeared to be about magic (in particular using the spirits to communicate over long distances) the books actually contained hidden information on cryptography and steganography.

One of the earliest examples of steganography can be found in around 440 B.C., where Herodotus (c.486-425 B.C.) wrote in his *Histories* about how Histiæus would shave the head of one of his most trusted slaves and then onto it would tattoo a secret message. Once the hair had regrown, the message was hidden and the slave could be sent to deliver the message. [27]

Another more modern example is from the Second World War. Spies would produce microdots (small round images around 1mm in diameter) of important information, which would then be hidden, for example as the full-stop at the end of a typewritten sentence. To the naked eye, the information is invisible, and can only be viewed using magnification.

2.1.2 Uses of Steganography

The historical primary use of steganography is for message hiding. When methods such as cryptography are used, the output of these methods, such as the ciphertext, is often very noticeable. The reason for this is that these methods are designed to ensure that the message is unreadable to anyone other than the intended receiver, rather than hide its existence. Steganographic techniques, however, are designed to ensure that the message (or data) is