



Steganography - The Art Of Hiding Information

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Roadmap

What is steganography?

The Prisoner's Problem

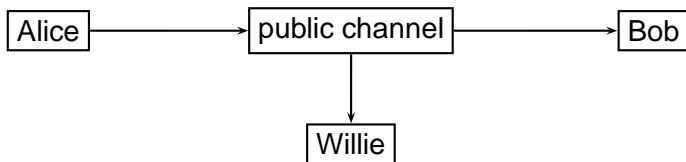
Variations

Hands on steganography

Applications for steganography



Prisoner's Problem with passive warden



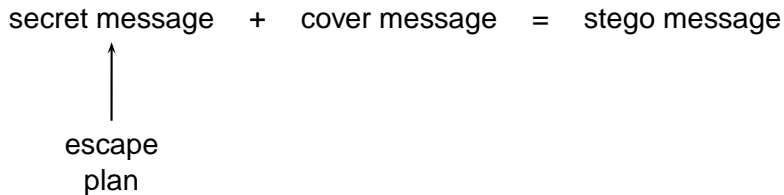


Basic idea behind steganography

secret message + cover message = stego message



Basic idea behind steganography

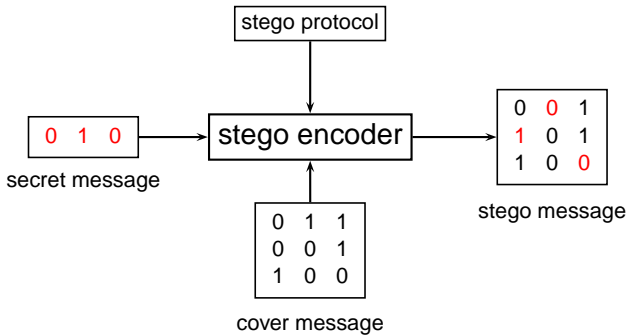


Prisoner's Problem with active warden



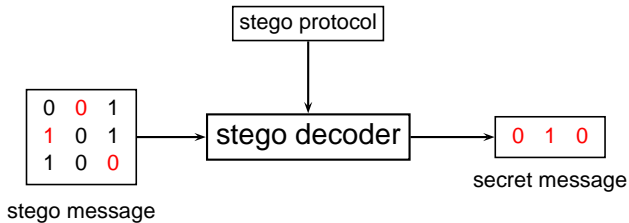


Steganographic encoding



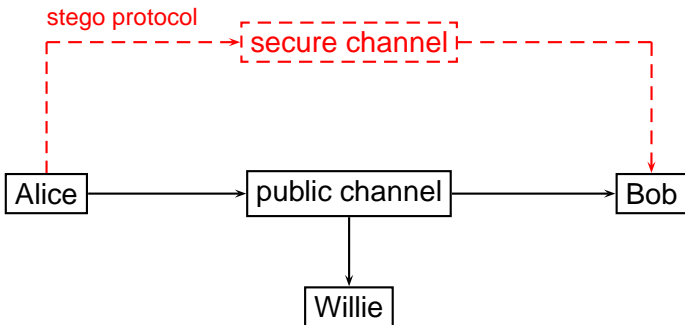


Steganographic decoding

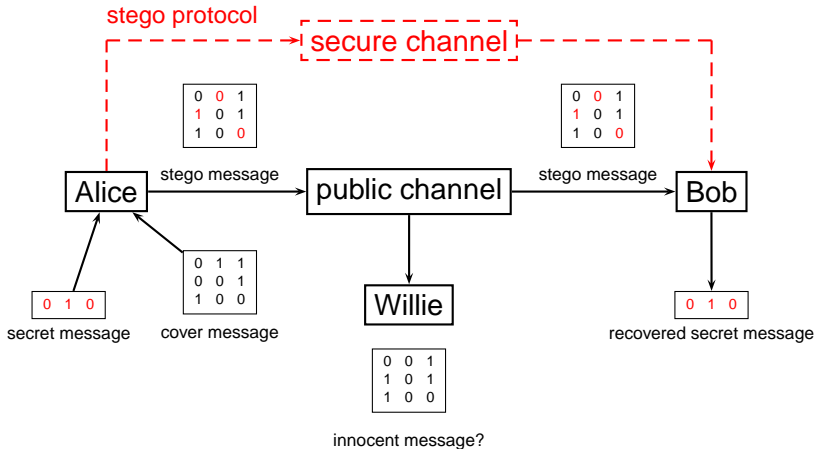




Expanded Prisoner's Problem



Prisoner's Problem solved





Applications for steganography I

Passive warden:



Applications for steganography I

Passive warden:

- ▶ obscuring content (not presence) of communication (Prisoner's Problem)



Applications for steganography I

Passive warden:

- ▶ obscuring content (not presence) of communication (Prisoner's Problem)
- ▶ obscuring both presence **and** content of communication (secret services)
 - ▶ deploying secret information through public channels (newspapers, websites, ...)



Applications for steganography II

Active Warden:



Applications for steganography II

Active Warden:

- ▶ Watermarking



Applications for steganography II

Active Warden:

- ▶ Watermarking
- ▶ Fingerprinting



Further Information

- ▶ Personal website about this topic:
<http://stego.bdd-music.de>
- ▶ More detailed presentation (in german): Wendsday,
January 14, 13:00, BAR/E63
- ▶ References



[Christian Cachin.](#)

An information-theoretic model for steganography.
In Proceedings of 2nd Workshop on Information Hiding.



[Fabien A.P. Petitcolas Ross J. Anderson.](#)

On the limits of steganography, 1997.