

156. SECRET SHARING SCHEMES WITH DIVERSE IMAGE MEDIA

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Visual secret sharing (VSS) schemes hide secret images in shares that appear noise-like picture or noiseless picture. VSS schemes suffer from a transmission risk problem while sharing contains secret images because it will awake suspicion and increase interception risk during transmission of the shares. To avoid this problem, we proposed a natural-image-based VSS scheme (NVSS scheme) that shares secret images through various carrier media to protect the secret and the participants during the transmission phase. This process involved to share a secret image over arbitrary selected natural images (called natural shares) and one noise-like share. The natural shares can be gray or color photographs of scenery, family activities, or even flysheets, bookmarks, web images, or hand-painted pictures in digital form or in printed form. The noise-like share is generated based on these natural shares and the secret image. The proposed approach gives an excellent solution for solving the transmission risk problem for the VSS schemes. The unaltered natural shares are diverse and innocuous, thus greatly reducing the transmission risk problem. We also propose possible ways to hide the noise-like share to reduce the transmission risk problem for the share.

Index Terms— Visual secret sharing scheme, Natural-image-based VSS scheme, natural shares, transmission risk.

Journal of Science and Innovative Engineering & Technology