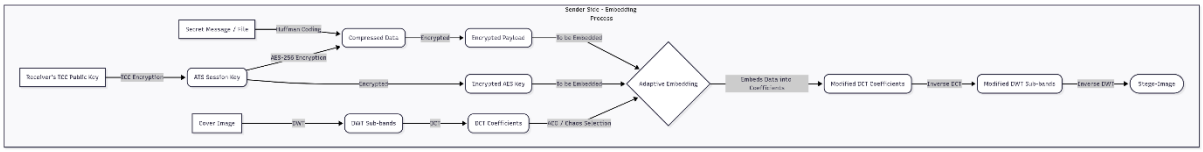
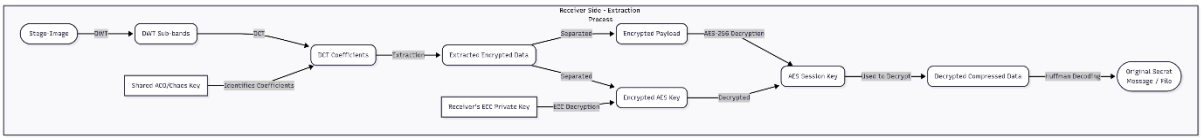
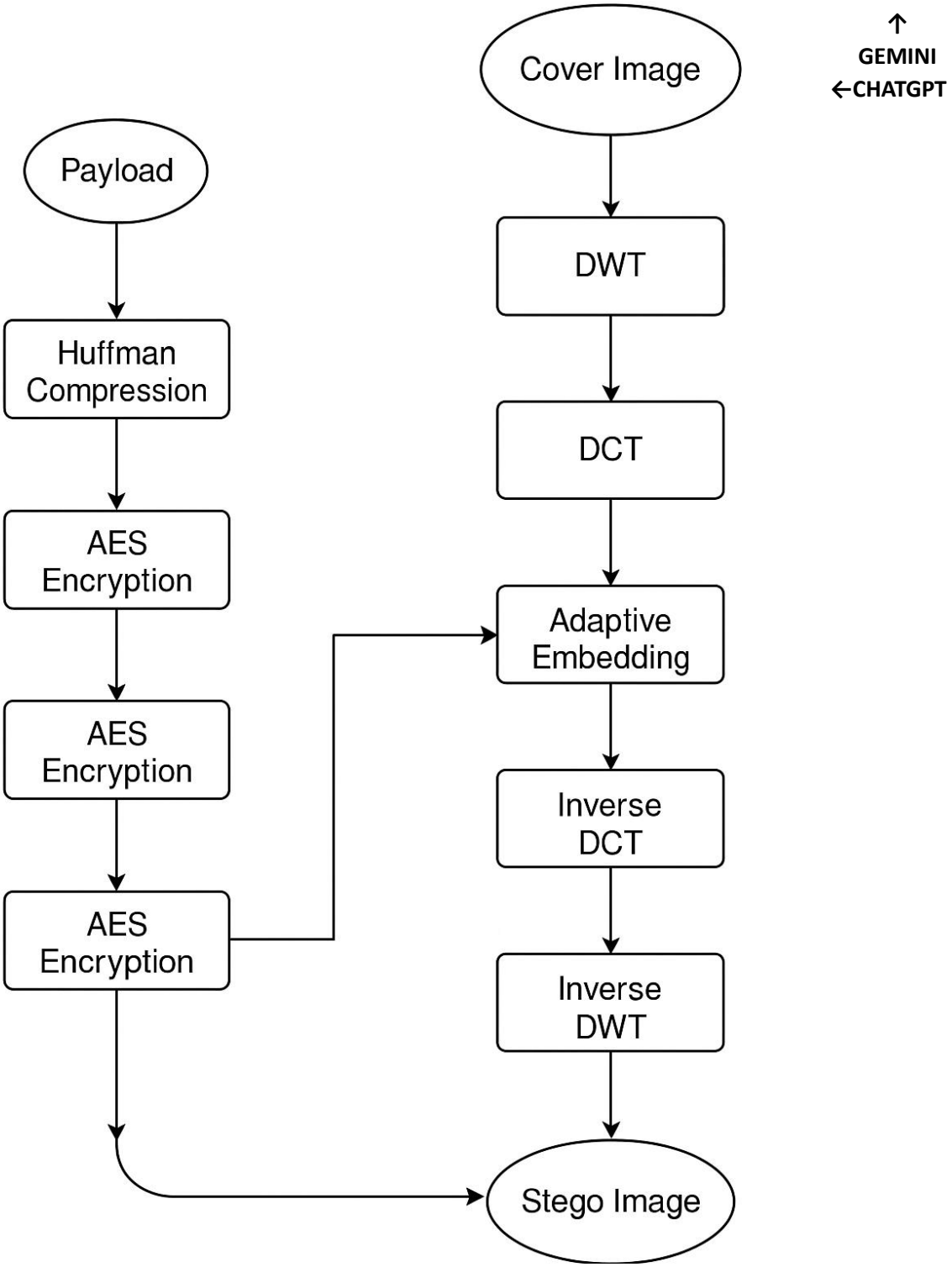
Sender Side: *Embedding Process*

```
graph TD
  subgraph Sender Side - Embedding Process
    direction LR

    A["Secret Message / File"] -- Huffman Coding --> B(Compressed Data)
    C(AES Session Key) -- AES-256 Encryption --> B
    B -- Encrypted --> D(Encrypted Payload)

    E[Receiver's ECC Public Key] -- ECC Encryption --> C
    C -- Encrypted --> F(Encrypted AES Key)

    I[Cover Image] -- DWT --> J(DWT Sub-bands)
    J -- DCT --> K(DCT Coefficients)

    D -- To be Embedded --> L{Adaptive Embedding}
    F -- To be Embedded --> L

    K -- ACO / Chaos Selection --> L

    L -- Embeds Data into Coefficients --> M(Modified DCT Coefficients)
    M -- Inverse DCT --> N(Modified DWT Sub-bands)
    N -- Inverse DWT --> O([Stego-Image])
  end
```

Receiver Side: *Extraction Process*

```
graph TD
  subgraph Receiver Side - Extraction Process
    direction LR

    P([Stego-Image]) -- DWT --> Q(DWT Sub-bands)
    Q -- DCT --> R(DCT Coefficients)

    S[Shared ACO/Chaos Key] -- Identifies Coefficients --> R
    R -- Extraction --> T(Extracted Encrypted Data)

    T -- Separated --> U(Encrypted Payload)
    T -- Separated --> V(Encrypted AES Key)

    W[Receiver's ECC Private Key] -- ECC Decryption --> V
    V -- Decrypted --> X(AES Session Key)

    U -- AES-256 Decryption --> X
    X -- Used to Decrypt --> Y(Decrypted Compressed Data)

    Y -- Huffman Decoding --> Z(["Original Secret <br/>Message / File"])
  end
```

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