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Information Security

Symmetric Key Cryptographic Primitives Based on Pseudo-Randomness, Randomness and Dedicated Coding

Power of Randomness for Enhancing Security and Low Implementation Complexity

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Power of Randomness for High Security and Low Implementation Complexity

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- **Goal**: Design of Cryptographic Primitives with Enhanced Security and Low Implementation Complexity

- Encryption - Compact Stream Ciphers
- Authentication Protocols for RFID and related applications

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Design Components:

- Simple Finite State Machine for the Pseudo-Randomness
- Dedicated Coding: Homophonic and Error-Correction Ones
- Randomness

Effects:

- Enhanced Security Implied by Randomness
- Low Implementation Complexity

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Stream Cipher Approaches

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- **One-Time Pad** – pure random approach (provable security)
- Traditional **Keystream Generator** – finite state machine: a deterministic approach (heuristic security)

Randomized approach:

- A stream cipher based on employment of **Pseudorandomness, Randomness and Dedicated Coding**
- **Towards provable security implied by the dimension of secret key**

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Framework for a Stream Ciphers Design

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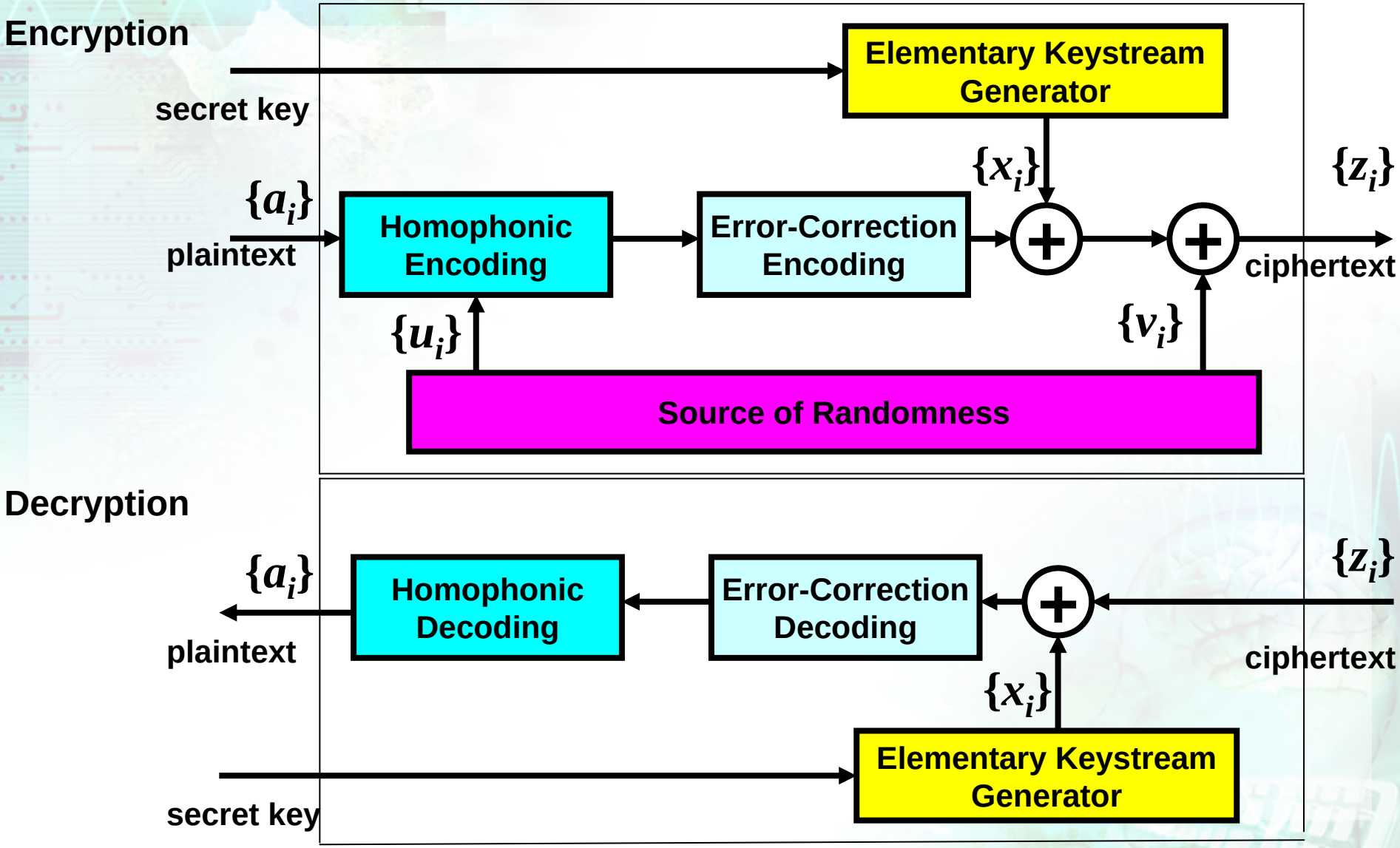

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