



# Information Assurance Laboratory

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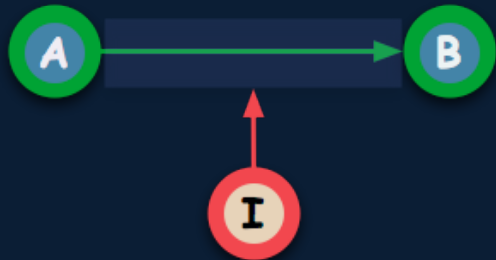
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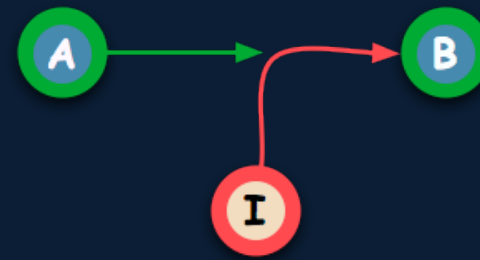
# Assuring Information Properties

## Confidentiality



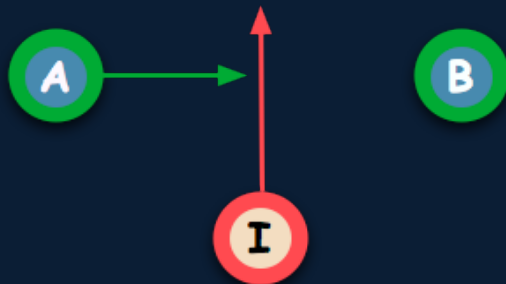
Protection against unauthorized disclosure

## Integrity



Protection against unauthorized modification

## Availability



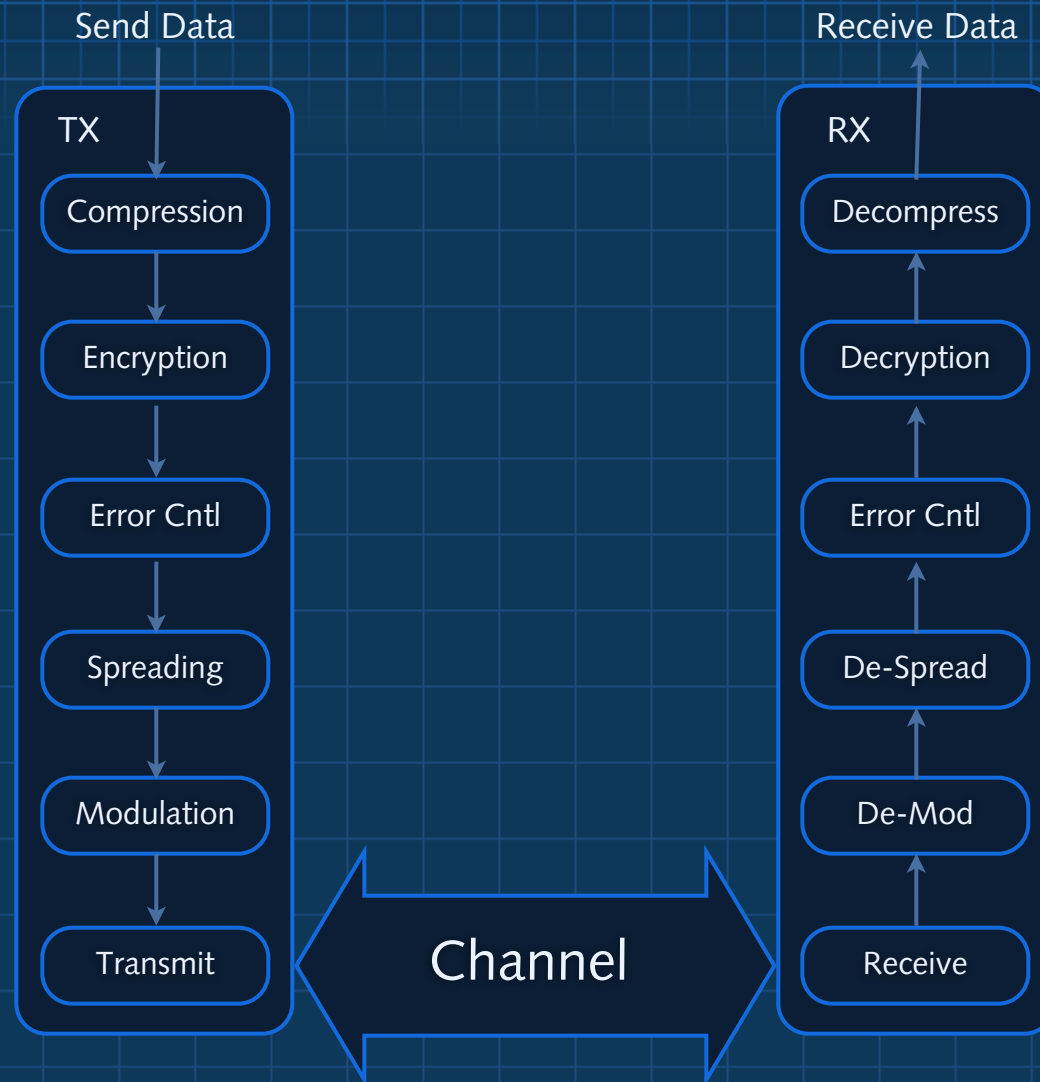
Protection against unauthorized disruption

## Accountability

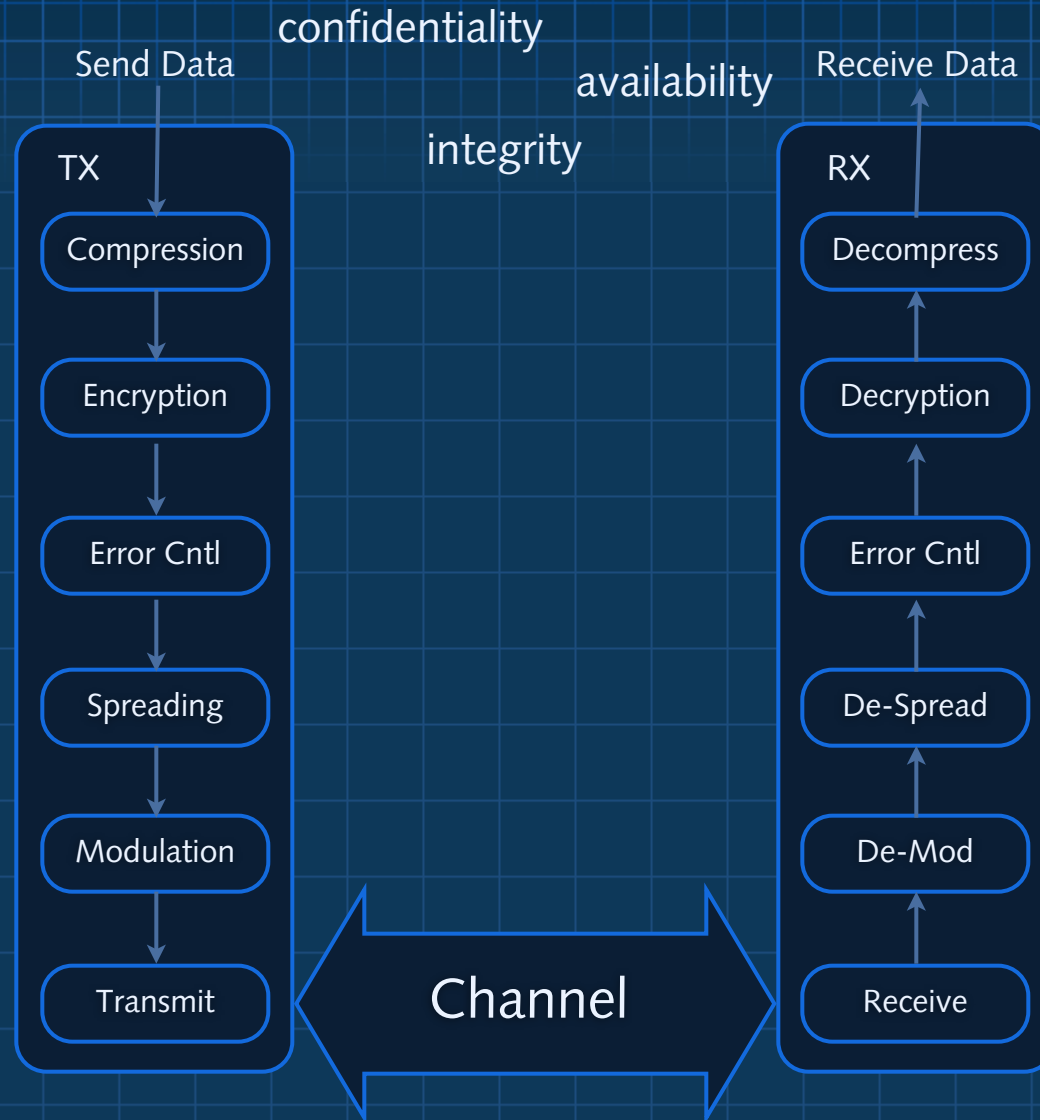


Enforcement of bindings between agents and actions

# Example: SDR Architecture



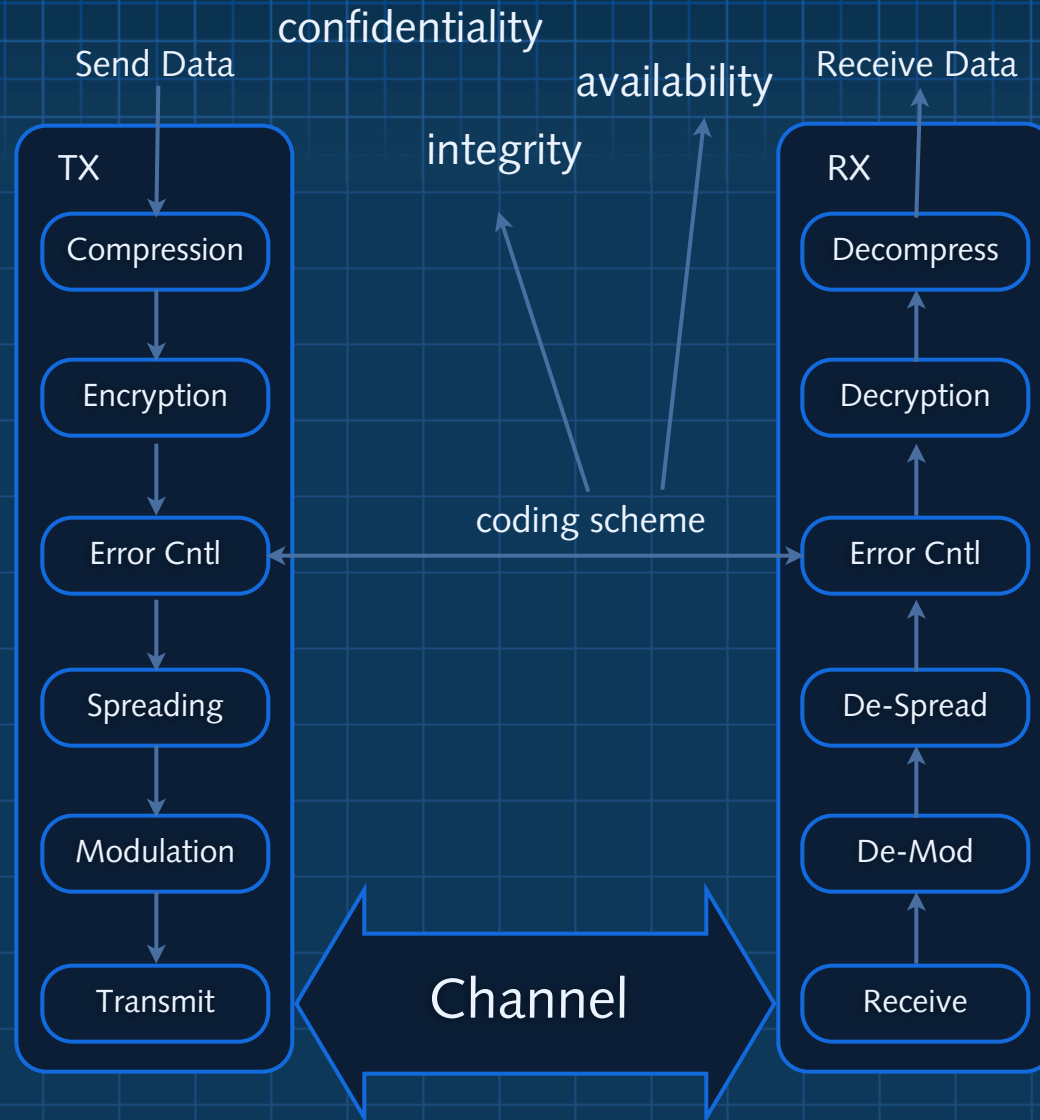
# Example: SDR Architecture



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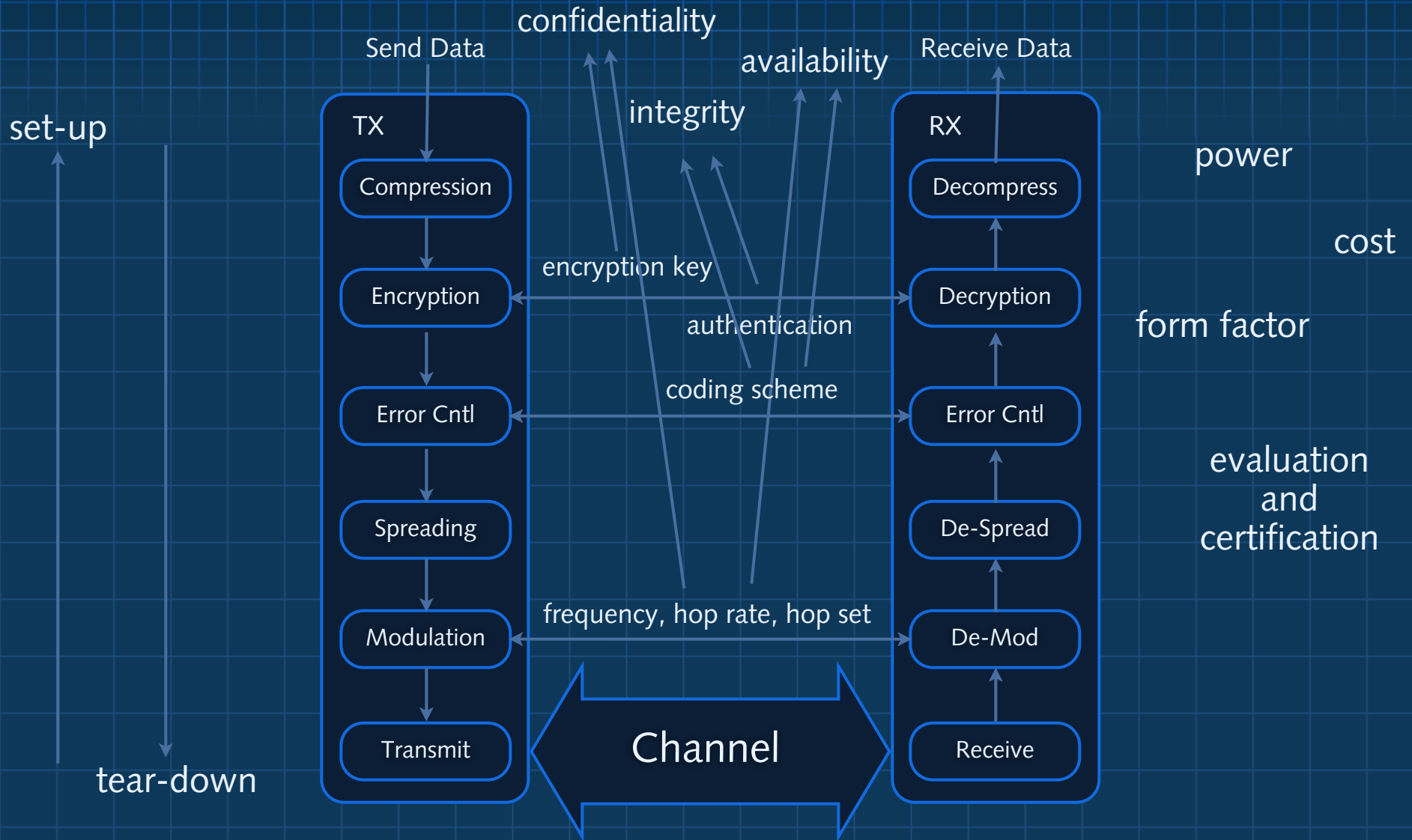
# Example: SDR Architecture



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# Example: SDR Architecture





# Information Assurance Lab Activities

- IA Research Programs
  - Network stability, availability and security
  - Access control over information at rest and in transit
  - Security as a system-level property
  - Trust modeling and assurance
- IA Educational Programs
  - MSIT in Information Assurance
  - MS and PhD Focus Area in Information Assurance (pending)
  - Information Assurance Education Brownbag
- IA Implementation
  - ITTC and EECS information security policies
  - KU information security policies

Application pending for NSA/DHS Center of Excellence  
Designation

# Information Assurance Lab Technologies

- Formal specification and verification
  - Rosetta and Raskell
  - PVS, Isabelle, SAL verification
  - Graph theoretic modeling
- Synthesis and principled development
  - Worker/Wrapper
  - InterpreterLib and ASG
  - Static analysis and compilation techniques
- Implementation tools
  - Access control
  - Virtualization and virtual machines
  - TPM/vTPM based protection schemes

A highly interdisciplinary approach to assurance