

# Network Coding for Content-Centric Networking / Named Data Networking: Requirements and Challenges

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# Draft history

- Document in the Network Coding Research Group (NWCRCG), will be presented on Thursday
- v0 initially presented in Singapore.
- v1 updated according to feedback from presentations in ICNRG and NWCRCG
- Still evolving.

# Key idea

- Both NC and ICN use orthogonal methods to improve content distribution → combine them!
- Create prefix names for coded content
  - Network coding info embedded in name or header
- Use ICN to retrieve this content
- Receive encoded packets, decode, voila.
- Session-less nature of ICN well suited for ICN, can leverage multiple interfaces, can receive packets from multiple sources, etc.
- As always, devil is in the details

# Requirements/Challenges

- What are the requirements:
  - Content naming
  - Transport
  - In-Network caching
  - Seamless mobility
  - Security and privacy
- What are the challenges:
  - Convolutional coding
  - Rate and Congestion control
  - Security and Privacy
  - Routing Scalability

# Deltas

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# Open issues

- More detailed presentation in NWCRCG
- Security section, mobility section need to be beefed up
  - Still work in progress
- Still some place holders (say on routing) to be filled up
- Welcome feedback and contributions