Internet Content Tagging and Distribution Protocol (ICTDP)

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What is the problem?

- Filtering of objectionable content
- One of the biggest problems the world faces
- Dark side of the Internet
- Human Rights Considerations of Internet Filtering
  https://datatracker.ietf.org/doc/draft-elkins-hrpc-ifilter/
8 Risk Zones

Risk Zone 1: Truth, Disinformation, Propaganda
Risk Zone 2: Addiction & the Dopamine Economy
Risk Zone 3: Economic & Asset Inequalities
Risk Zone 4: Machine Ethics & Algorithmic Biases
Risk Zone 5: Surveillance State
Risk Zone 6: Data Control & Monetization
Risk Zone 7: Implicit Trust & User Understanding
Risk Zone 8: Hateful & Criminal Actors
How ISIS became the world’s deadliest startup

• ISIS uses technology better than most tech start-ups. Ghost Security Group, a counterterrorism organization, has noted in the past that ISIS utilizes almost every social app imaginable to communicate and share its propaganda, including mainstays like Twitter and Facebook; encrypted chat apps such as Telegram, Surespot, and Threema; and messaging platforms including Kik and WhatsApp. The terror group shares videos of beheadings on YouTube and even more gruesome clips on LiveLeak.

• They use the remarkably secure Apple iMessage to communicate. They preach to their disciples across the world using Internet radio stations. When a terror attack takes place, they use Twitter to claim responsibility and their followers subsequently cheer with favorites and retweets. Perhaps most frighteningly, the group’s dominance as a modern-day terror network is visible through how quickly their social-media dominance is accelerating.

Network Service Header Encoding (RFC 8300)

- **Network Service Header (NSH)**
  - **Transport Encapsulation**
  - **Payload Packet**

- **Base Header**
  - **Version (0x0)**
  - **TTL counts down from 63**
  - **Length (in long words) of whole NSH**
  - **Meta Data type (see later slide)**
  - **Next Protocol (Protocol type of next header)**
    - IPv4/IPv6/MPLS/Ethernet etc.

- **Service Path Header**
  - **Service Path Identifier (SPI)**
  - **Service Index**
    - SPI indicates the specific SFP in use
    - SI indicates which SF to process next
    - One or more Extension Headers
      - Used principally (only?) to carry Meta Data
        - See later slide

- **Extension Header**
Meta Data

• What is Meta Data?
  • Information about the packet that is carried along with the packet
    • May be derived from the packet (e.g., hash or DPI)
    • May be generated by an SF (e.g., caller ID or content type)
  • Used by SFs to help execute their functions on the packet
    • Generally, Meta Data could be regenerated by an SF, but would be wasteful of processing and configuration

• Where do you draw the line?
  • A Classifier works on a packet to select the SFP
  • That work is carried in the NSH as the SPI
    • The SPI is not considered to be Meta Data
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