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
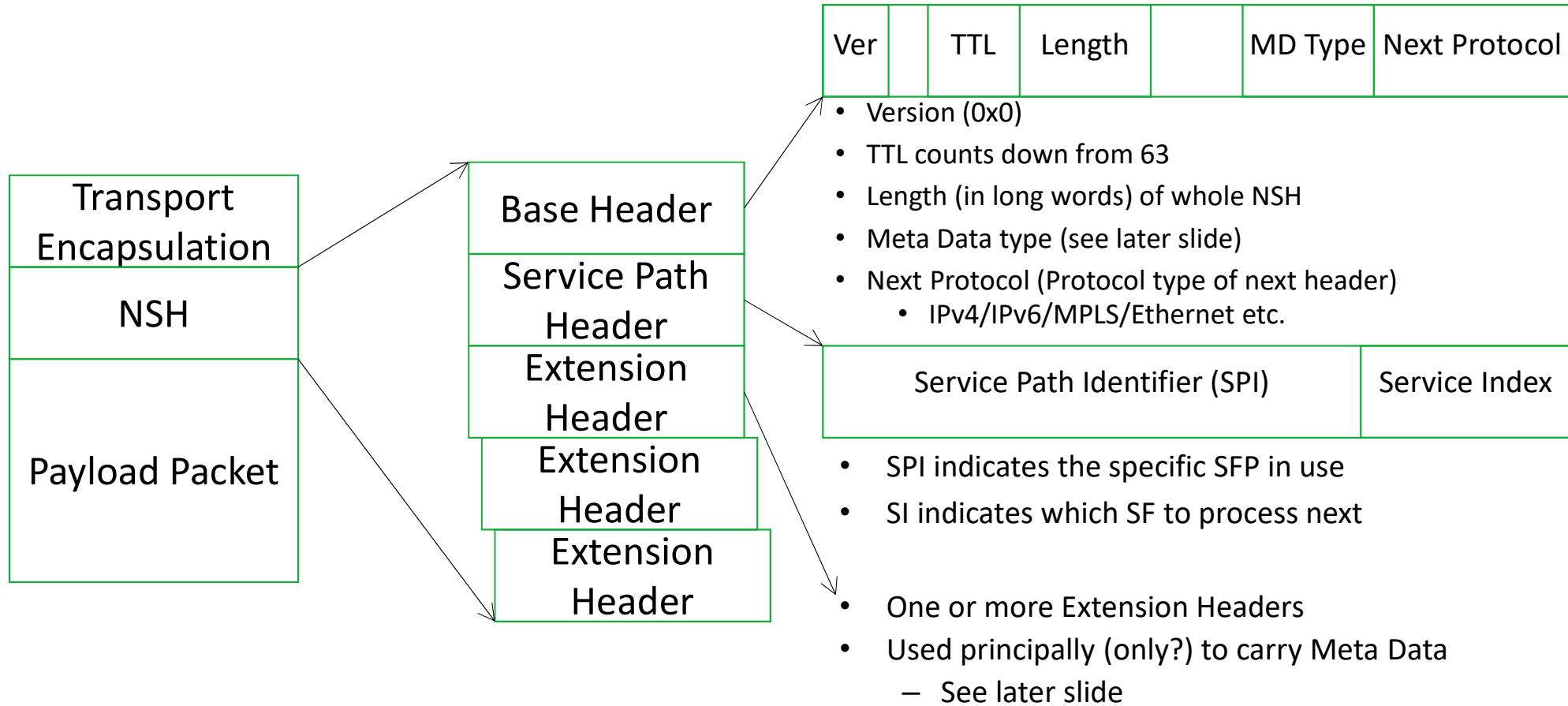
- Human Rights Considerations of Internet Filtering
  https://datatracker.ietf.org/doc/draft-elkins-hrpc-ifilter/

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.

https://www.vanityfair.com/news/2016/06/how-isis-became-the-worlds-deadliest-tech-start-up

Network Service Header Encoding (RFC 8300)

Ver		TTL	Length		MD Type	Next Protocol

- 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.

Transport Encapsulation
NSH
Payload Packet

Base Header
Service Path Header
Extension Header
Extension Header
Extension 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

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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