Ernestine might like PLUS too.

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Network Resources are scarce.

(e.g. spectrum)
Mobile networks attempt to make the best use of resources.
ACCORD 1: Behaviour of TCP in Mobile Networks

1. Noise and retransmissions here reduce throughput, which...

2. ...can be interpreted as congestion by TCP endpoints

3. Meanwhile radio retransmissions are not in sync with TCP

4. So network may proxy TCP to attempt to fix this

= network and endpoints not working together on flow control
ACCORD 2: Resource Allocation by Resource Need

Mobile Network “Bearers”
- Networks assign appropriate bearer to upstream and downstream flow
- Bearer = overlay network that spans the mobile network
- Each bearer has an associated QoS class
- Incorrect traffic assignment can cause inefficient use of the radio spectrum (finite resource) and bad experience.

Allocation for Reasonable Network Management
- Delay-insensitive traffic
- Throughput-tolerant traffic
Once upon a time...

Some methods previously used to classify traffic or solve issues:

- 5 tuple info for a single flow
- DPI
- Transparent proxies / caches
- TCP optimisers
- etc.
Encryption is sensible and makes this harder.
How can we encrypt and make best use of network resources?
What mobile networks need

- Ability to give a flow the best balance of resources
- Ability to manage network resources sensibly
- Ability to future proof networks for new traffic needs
- Ability to classify a flow, with the lowest amount of information possible
- Ability to trust in the trust model
- No DPI, no traffic inspection
- No trust model based on “traffic prioritisation”.