P2P Streaming Protocol (PPSP) Requirements

draft-ietf-ppsp-reqs-03

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## Change since -02

Add a new security requirement for content integrity check suggested by Ling-li Deng, Christian, etc: PPSP.SEC.REQ-9:

Integrity of the streaming content in PPSP MUST be supported to provide a peer with the possibility to identify inauthentic media content (undesirable modified by other entities rather than its genuine source) and report this towards the tracker to exclude the related source from the P2P streaming system. The corresponding checksum distribution and verification scheme SHOULD scale well in P2P streaming system and be robust against distrustful trackers/peers.

## Add a new QoS requirement suggested by Christian, etc: <u>PPSP.REQ-8</u>:

The tracker and peer protocols MUST support carrying QoS related parameters (e.g. video quality, delay requirements) together with the priorities of these parameters, and QoS situation (e.g. performance, available uplink bandwidth) of content providing peers.

## Change since -02

 Add some text about Chunk Availability Digest to both tracker protocol and peer protocol suggested by Yun-fei Zhang, etc:

PPSP.TP.REQ-6:

The peers may report CHUNK AVAILABILTY DIGEST information (i.e. compact expression of chunk availability) to the tracker when possible to decrease the bandwidth consumption for messages in bandwidth constraint environment like mobile network. For example, if a peer has a bitmap like 111111...1(100 continuous 1)xxx..., the 100 continuous "1" can be expressed by one byte with seven bits representing 100 and one bit representing "1". In this example, 100-8=92 bits are saved. Considering the frequency of exchange of CHUNK AVAILBILITY and the fact that many bitmaps have quite a long length of continuous "1" or "0", such compression makes sense.

PPSP.PP.REQ-4:

In PPSP.PP.REQ-1/2/4, the peers may exchange CHUNK AVAILABILTY DIGEST information (i.e. compact expression of chunk availability) to with other peers when possible to decrease the bandwidth consumption for messages in bandwidth constraint environment like mobile network.

Thank you