SACK-IMMEDIATELY extension for SCTP
draft-tuexen-tsvwg-sctp-sack-immediately-00.txt

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The Problem

• The SCTP receiver normally delays SACKs.
• This might result in reduced performance due to
  – The sender has not enough queued user data to send the remaining DATA chunks due to the Nagle algorithm.
  – The sending of a DATA chunk fills the congestion or receiver window.
  – The sender is in the SHUTDOWN-PENDING state.
  – The sender has reduced its RTO.Min such that a retransmission timeout will occur if the receiver would delay its SACK.
• To overcome this limitation the sender has to indicate to the receiver that it needs a SACK immediately.
The Extended DATA Chunk Format

```
0                   1                   2                   3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|   Type = 0    |  Res  |I|U|B|E|           Length              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                              TSN                              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|        Stream Identifier      |     Stream Sequence Number    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                  Payload Protocol Identifier                  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
\                           User Data                           /
 \                           /                                  
 \                          /                                   
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
Considerations

• On reception of a DATA chunk with I-bit set the sending of the corresponding SACK SHOULD NOT be delayed.

• If the receiver does not support this extension, it just ignores the I-bit as specified in RFC 4960. Therefore interoperability between a node supporting this extension and one not supporting it is not a problem.
Questions

• Comments?
• Acceptable as a WG item for TSVWG?