Delay Tolerant Transmissions Over SCHC

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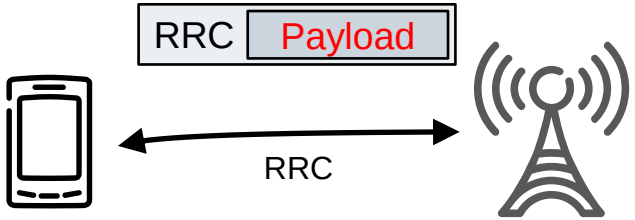
Most UE NB-IoT implementations only support Data over NAS (DoNAS)



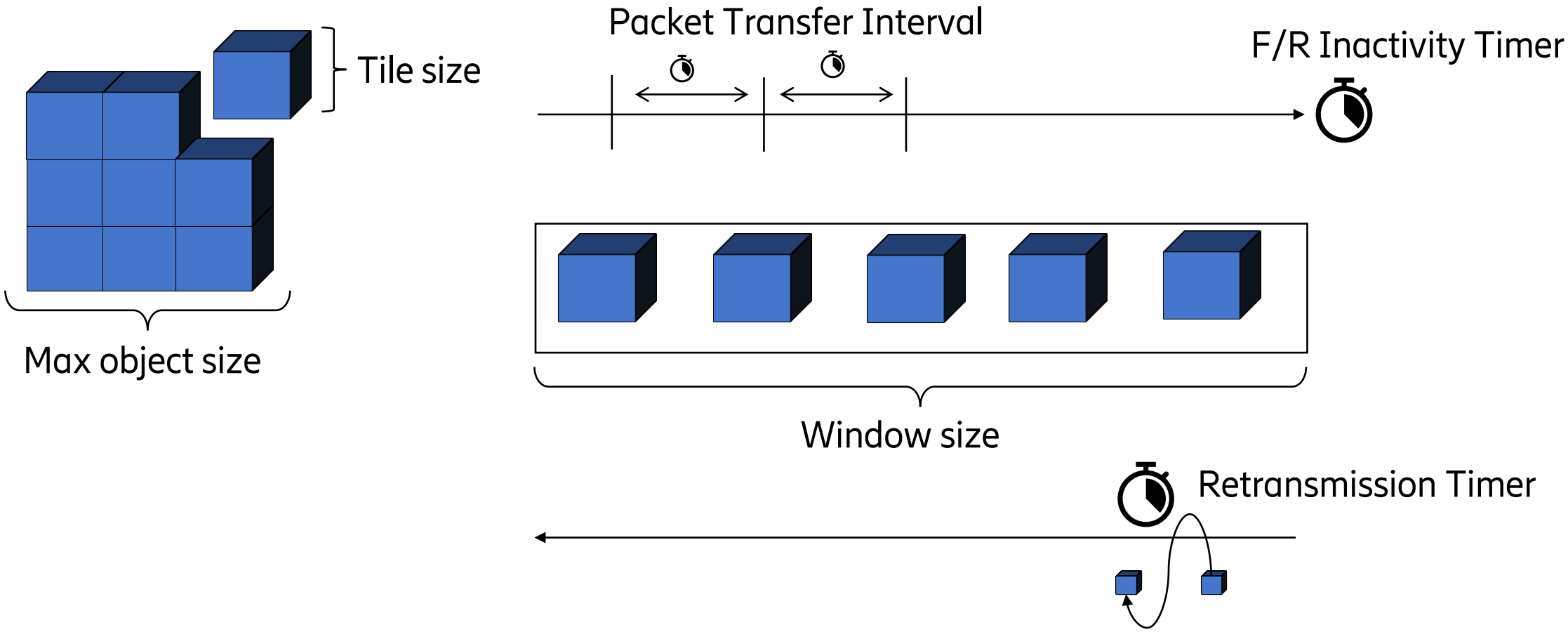
- Data over NAS was meant to transmit very infrequent and little data
- Uses the control plane and therefore a high priority channel for transmission

Problem:
Firmware updates/Large Log files

- Causes disruption in whole site → Due to the high priority nature of the channel used
  - Saturation of the channel caused by the high quantity of packets fragments due to the large object transmitted
  - Retransmission's mechanisms worsens the situation
  - Time outs caused by congestion controls and signaling timers also contributing to signaling storms
- Basically, has led to network operators to ban any large files transfer on NB-IoT equipment's, which in particular targets FoTA and SoTA

Possible solution: Enable Delay tolerant transmission

SCHC Delay tolerant parameters



One Profile = Multiple Configurations

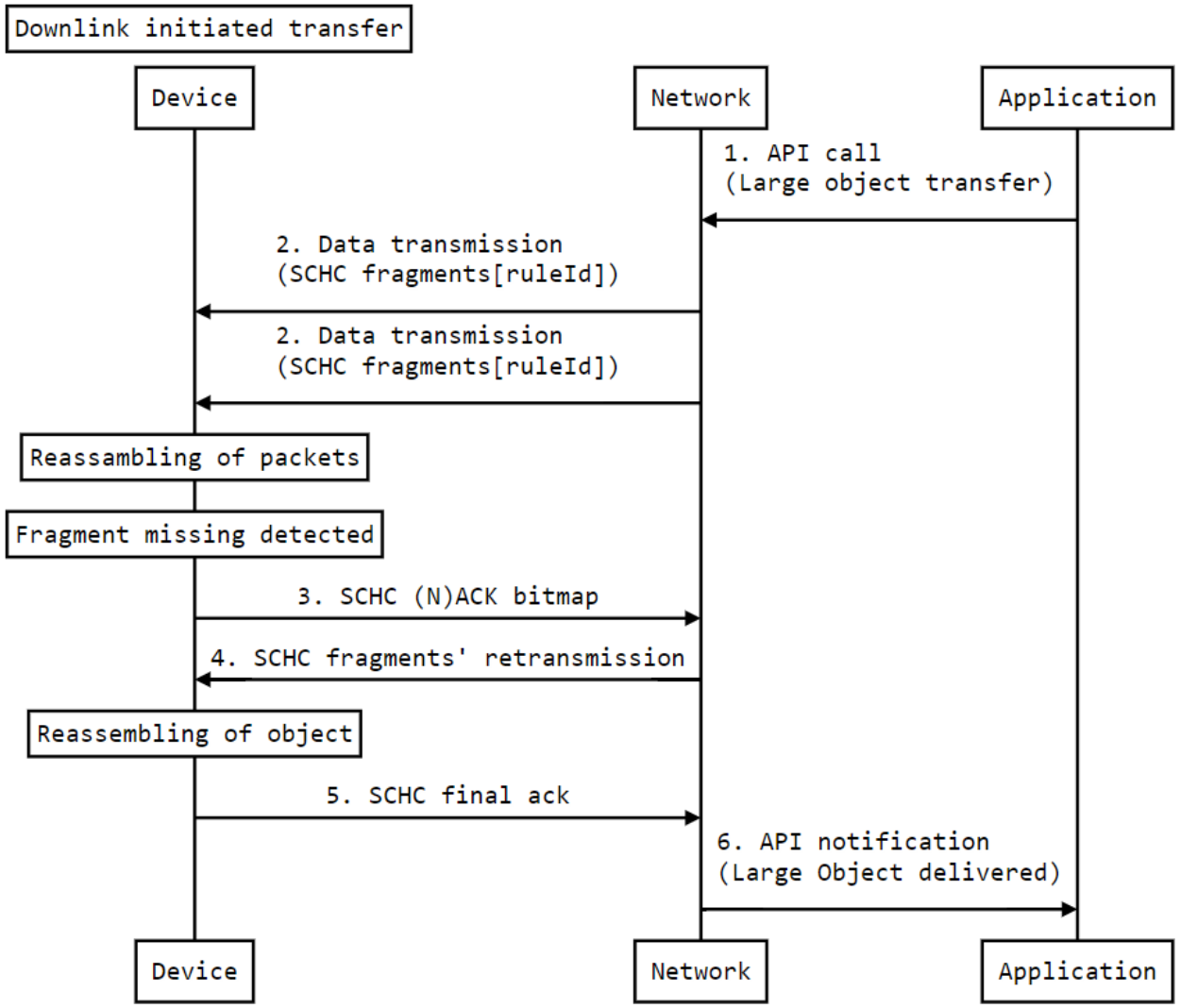
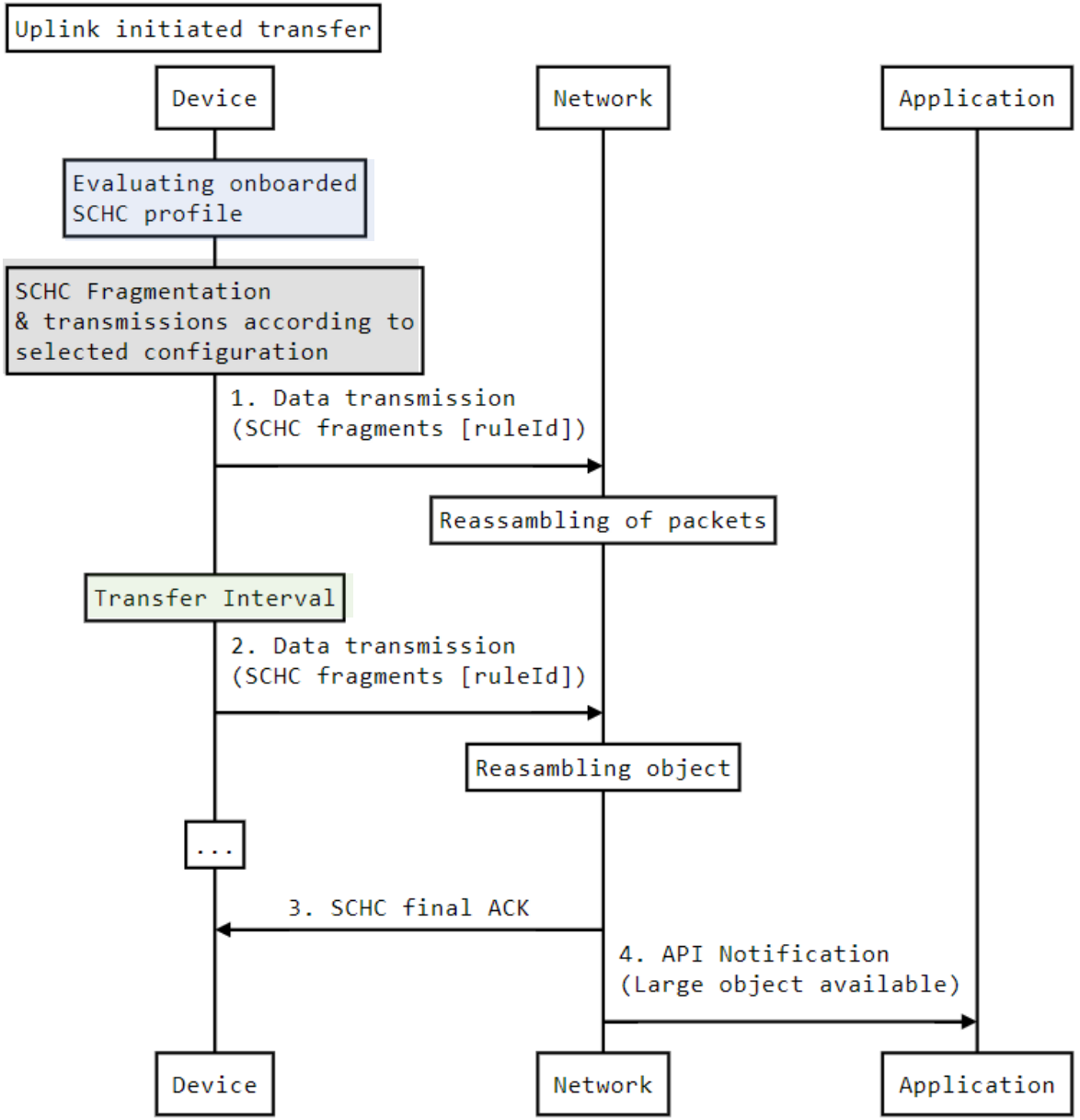
ID (UL)	0
SCHC MAX_PACKET_SIZE	10MB
TRANSFER_INTERVAL	60 min
TILES_SIZE	1358
INACTIVITY_TIMER	120
RETRANSMISSION_TIMER	120
WINDOW_SIZE	5
MAX_ACK_REQUEST	5
RULE_SET	[0]

ID (UL)	1
SCHC MAX_PACKET_SIZE	100MB
TRANSFER_INTERVAL	60 min
TILES_SIZE	1358
INACTIVITY_TIMER	120
RETRANSMISSION_TIMER	120
WINDOW_SIZE	15
MAX_ACK_REQUEST	5
RULE_SET	[1]

ID (DL)	0
SCHC MAX_PACKET_SIZE	10MB
~~TRANSFER_INTERVAL~~	
TILES_SIZE	1358
INACTIVITY_TIMER	120
RETRANSMISSION_TIMER	120
WINDOW_SIZE	5
MAX_ACK_REQUEST	5
RULE_SET	[0]

ID (DL)	1
SCHC MAX_PACKET_SIZE	1GB
~~TRANSFER_INTERVAL~~	
TILES_SIZE	1358
INACTIVITY_TIMER	24h
RETRANSMISSION_TIMER	24h
WINDOW_SIZE	5
MAX_ACK_REQUEST	5
RULE_SET	[1]

Downlink initiated transfer



Uplink initiated transfer