SCHC for NB-IoT
(draft-minaburo-lpwan-nbiot-hc-00)

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# Architectural Issues

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Transmission modes

• Data Over Non-Access-Stratum (DoNAS)
  – Encryption at MME
  – PDCP, RLC Transparent mode (No headers, No segmentation or concatenation)
  – HARQ (Hybrid Automatic Repeat reQuest)
• Connected mode User Plane
  – Encryption at PDCP
  – RLC (Segmentation and Concatenation)
    • Acknowledged mode (Additional Reliability layer)
    • Unacknowledged mode (from Rel 15)
  – HARQ (Hybrid Automatic Repeat reQuest)
NB-IoT System Architecture

User Plane Stack for DoNAS

User Plane Stack for Connected mode
Operation parameters

• Fragmentation Parameters
  – Rule ID
  – DTag
  – FCN
  – Retransmission Timer
  – Inactivity Timer
  – MAX_ACK_Retries
  – MAX_ATTEMPS

• Padding treatment

• Rule ID
  – In the SCHC C/D context the Rule used to keep the Field Description of the header packet.
  – In SCHC Fragmentation the specific modes and settings.
  – And at least one Rule ID may be reserved to the case where no SCHC C/D nor SCHC fragmentation were possible.
Use cases

• NB-IoT data over NAS example
• NB-IoT example with mobility
• LTE-M considerations (and potentially 5GNR)