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LORA / LORAWAN TUTORIAL 4

LoRaWAN Device Classes

v1.0.0

INTRO

- In this tutorial I will explain what LoRaWAN device classes are.

LORAWAN DEVICE CLASSES

- The LoRaWAN specification [4] defines three device classes:

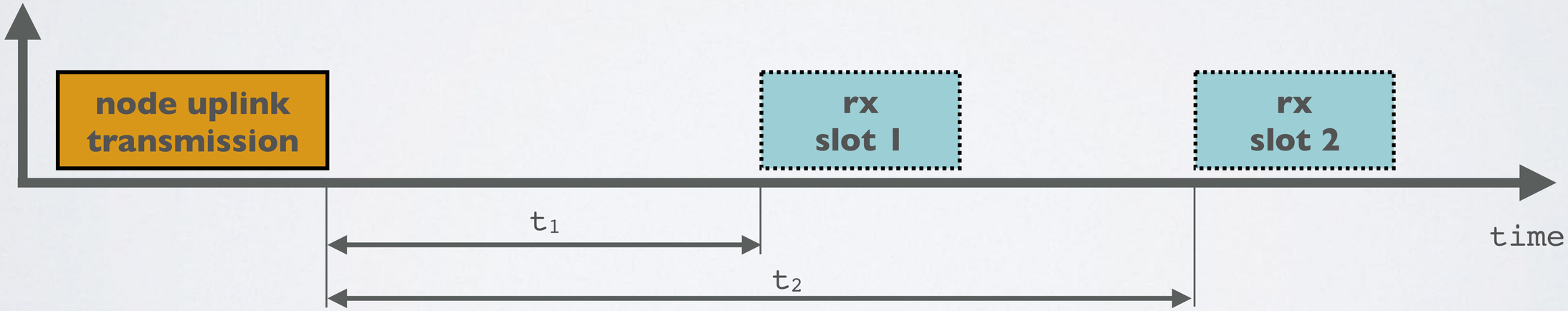
Class	Description
A(II)	Battery powered devices. Each device uplink to the gateway and is followed by two short downlink receive windows.
B(eacon)	Same as class A but these devices also opens extra receive windows at scheduled times.
C(ontinuos)	Same as A but these devices are continuously listening. Hence these devices uses more power and are often mains powered.

CLASS A

- At any time an end node can broadcast a signal. After this uplink transmission (tx) the end node will listen for a response from the gateway.

- The end node opens two receive slots at t_1 and t_2 seconds after an uplink transmission. The gateway can respond within the first receive slot or the second receive slot, but not both.

- Class B and C devices must also support class A functionality.

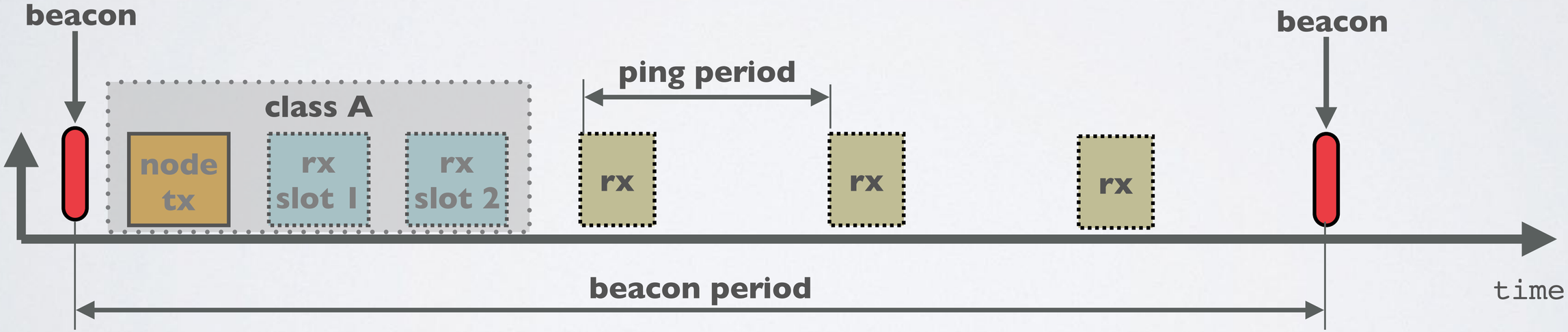


CLASS B

- In addition to Class A receive slots, class B devices opens extra receive slots at scheduled times.

- The end node receives a time synchronised beacon from the gateway, allowing the gateway to know when the node is listening.

- A class B device does not support device C functionality.



CLASS C

- In addition to Class A receive slots a class C device will listen continuously for responses from the gateway.

- A class C device does not support device B functionality.