

# Unavoidable Data Loss

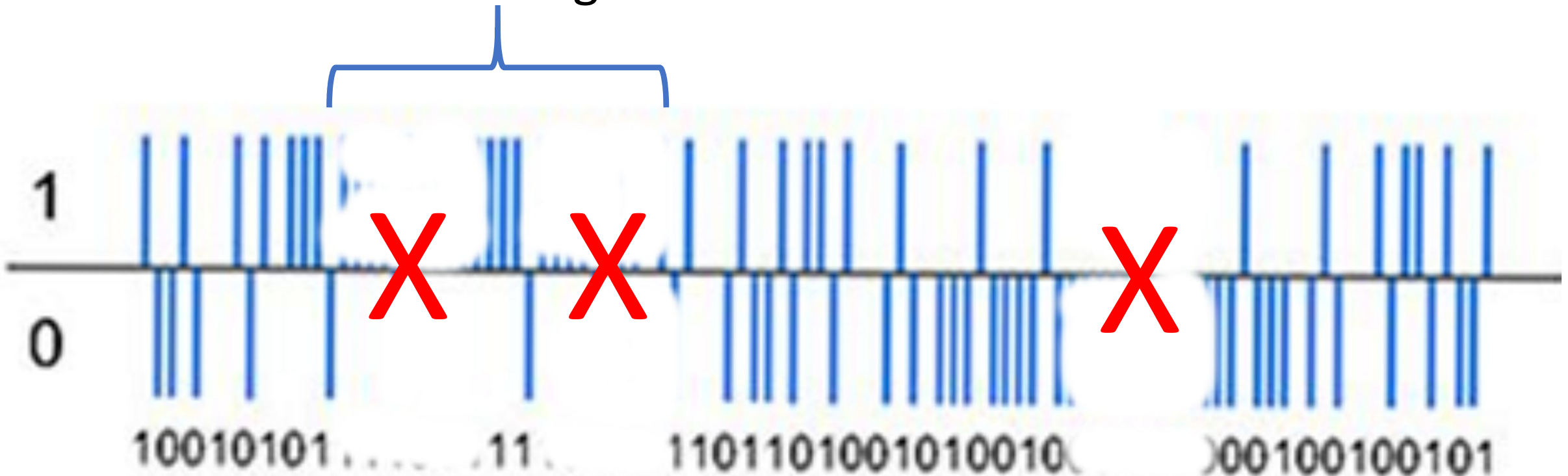
- Communication path breakdown
  - RF Signal fade
  - Local Area Network
  - World Wide Web
  - Server

# Determination of data loss

- WIRES-X logs data events as a text file
  - Socket Communication Timeout (SCT)
- Measure number of SCTs as of the start of the WIRES-X session
- Measure the error rate of SCTs occurring within a 10 minute (error rate) sliding window

# Determination of data loss

10 minute Sliding Window



X - Socket Communication Timeout Error (SCT)

Session Time (T)

# Quality of Service Quotient

$$QSQ = 100 - (\#X/T + \text{Error Rate} * 10)$$

Where:  $\#X = 3$

$T = 60$  minutes

Error Rate =  $\#X$  in window = 2

QSQ = 80



# Interpretation of QSQ

- QSQ is announced as part of the repeater ID when the QSQ is low and the node is connected to a room
- High values of QSQ means relatively low number of SCTs
- Low values of QSQ means a relatively high number of SCTs with a high rate of occurrences
- A QSQ of less than 70 indicates a poor connection with a high number of communication breakdowns.