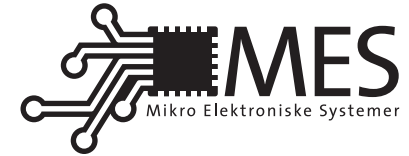




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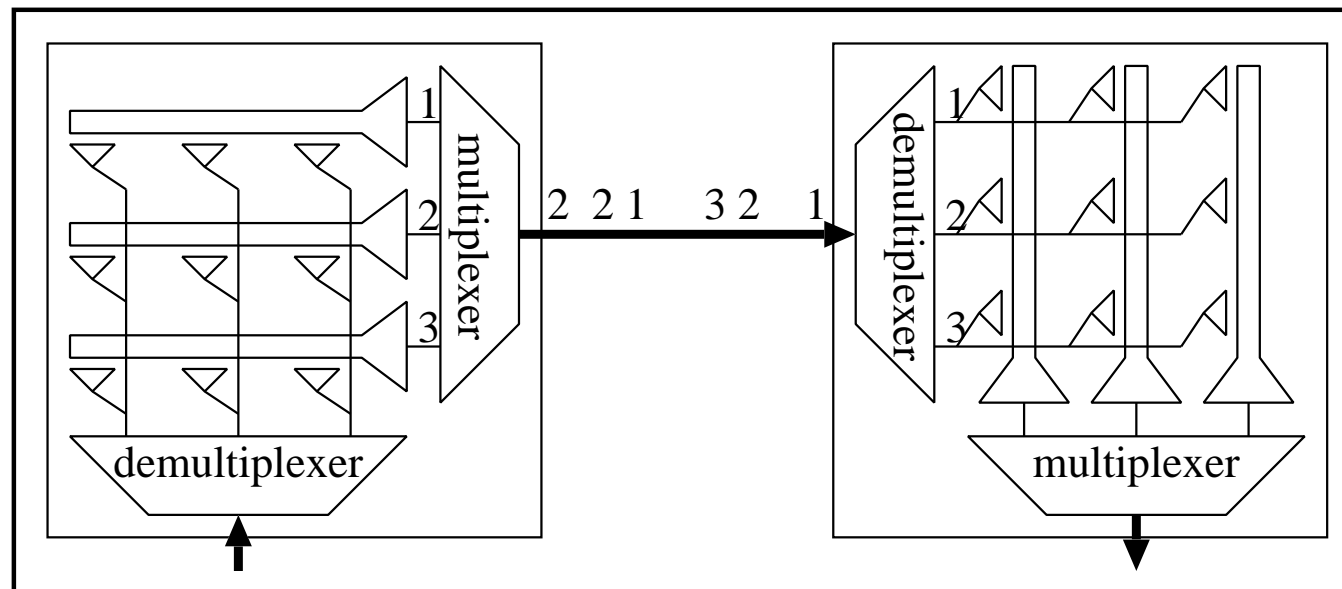
# Neuromorphic Electronics

## Neuromorphic Communication



# The basic Idea of AER

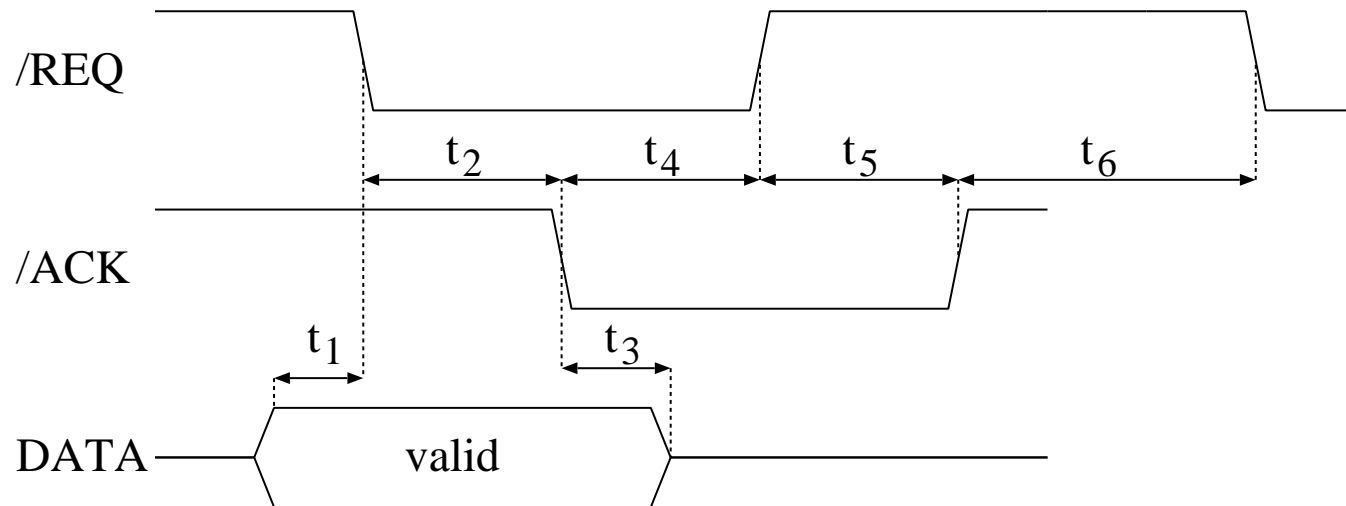
trading in parallelism for speed





## 4 Phase Handshake

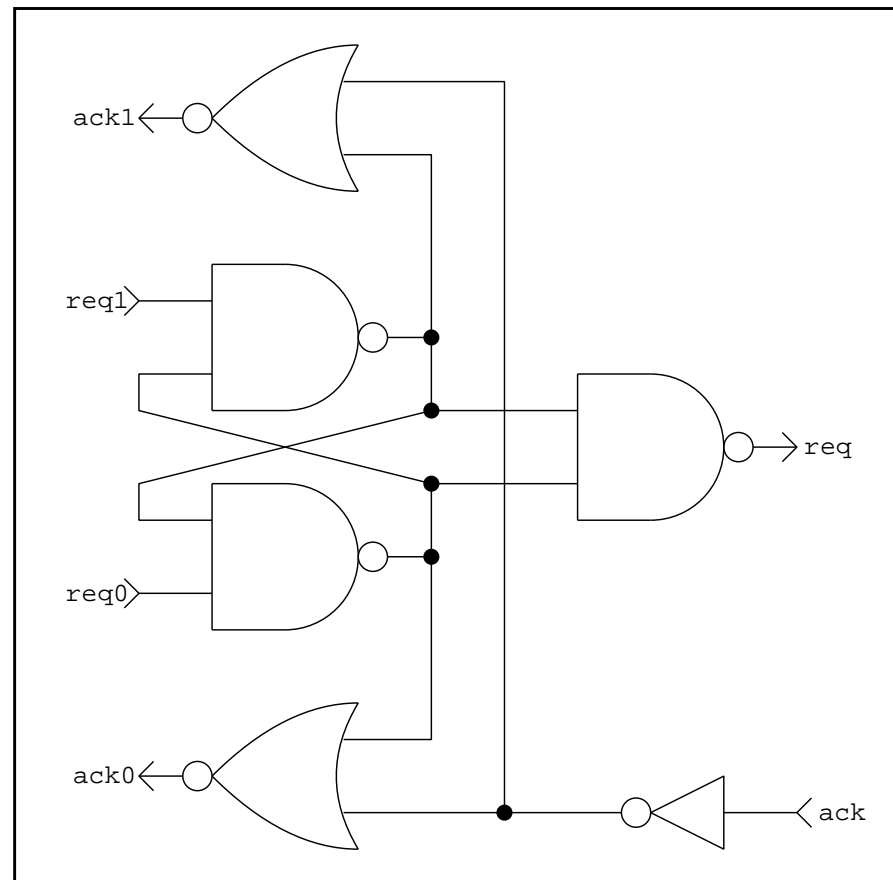
Asynchronous Communication





# Full Arbitration (1/3)

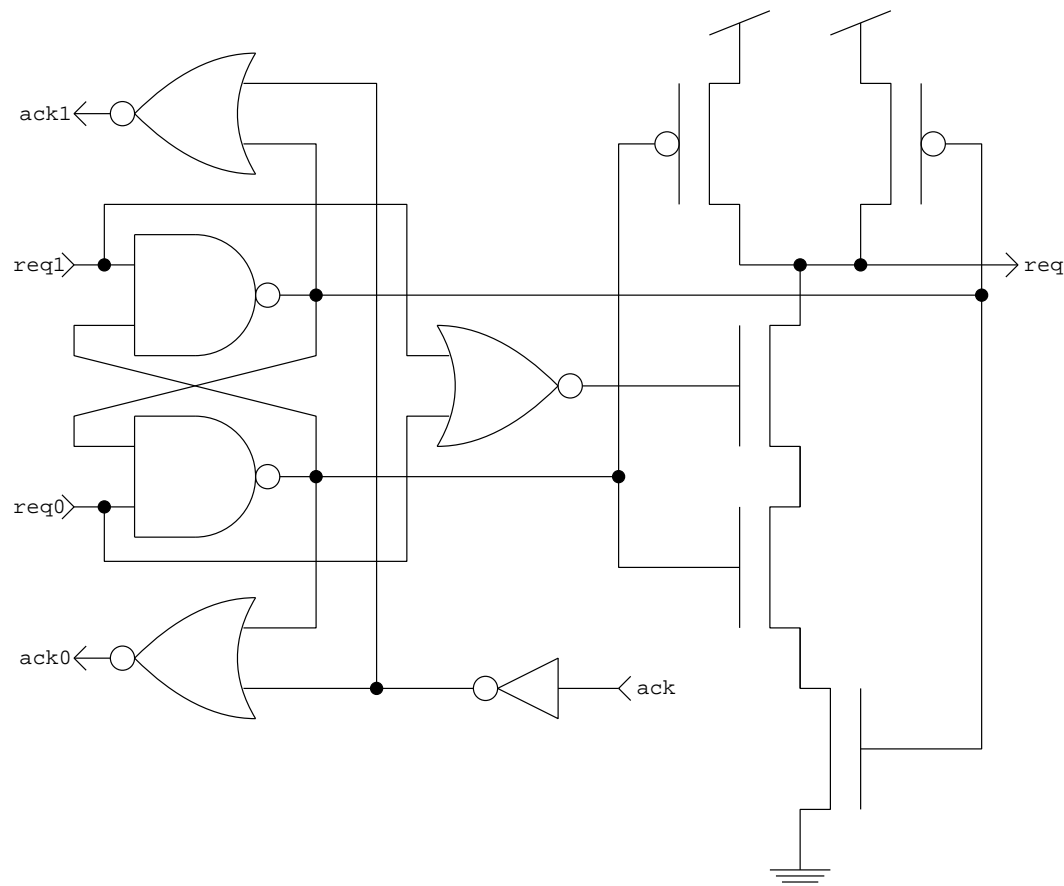
two input greedy arbiter





# Full Arbitration (2/3)

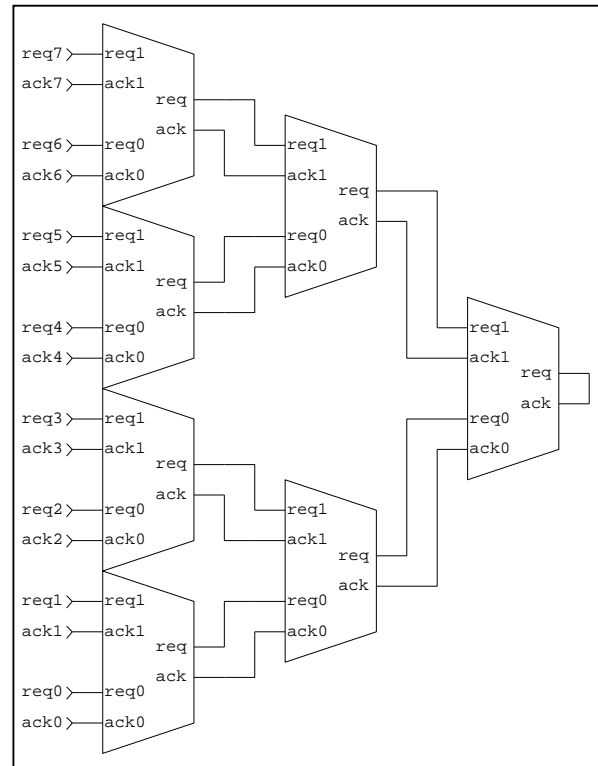
glitch free two input greedy arbiter





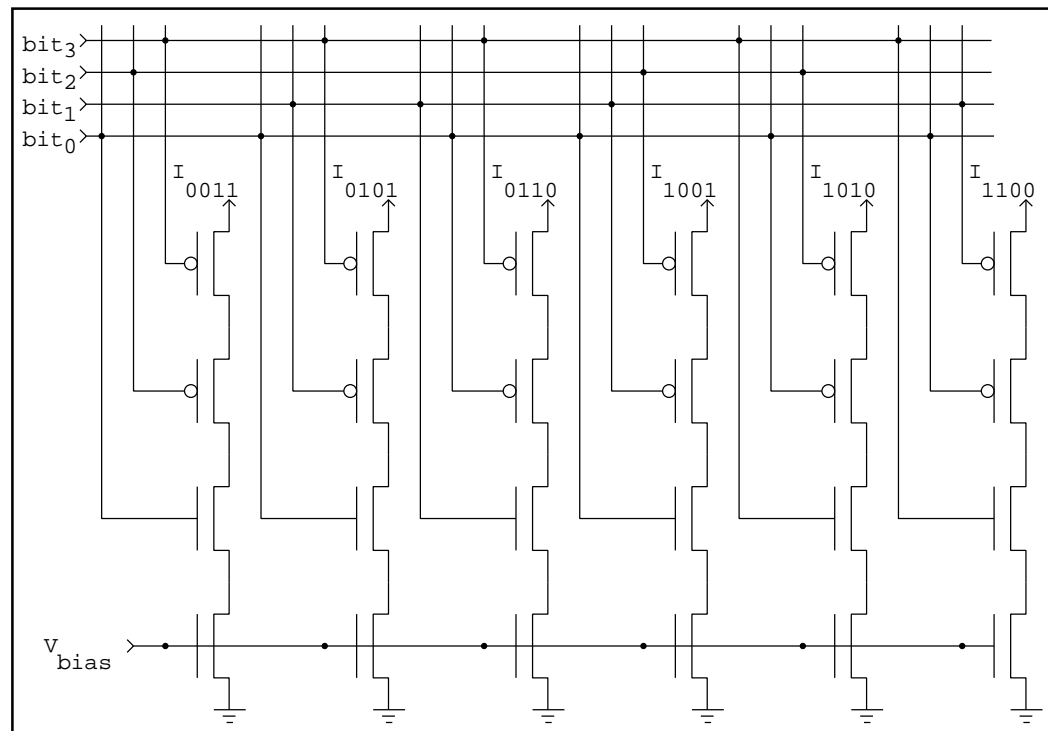
# Full Arbitration (3/3)

8 input arbiter binary tree



# Discarding

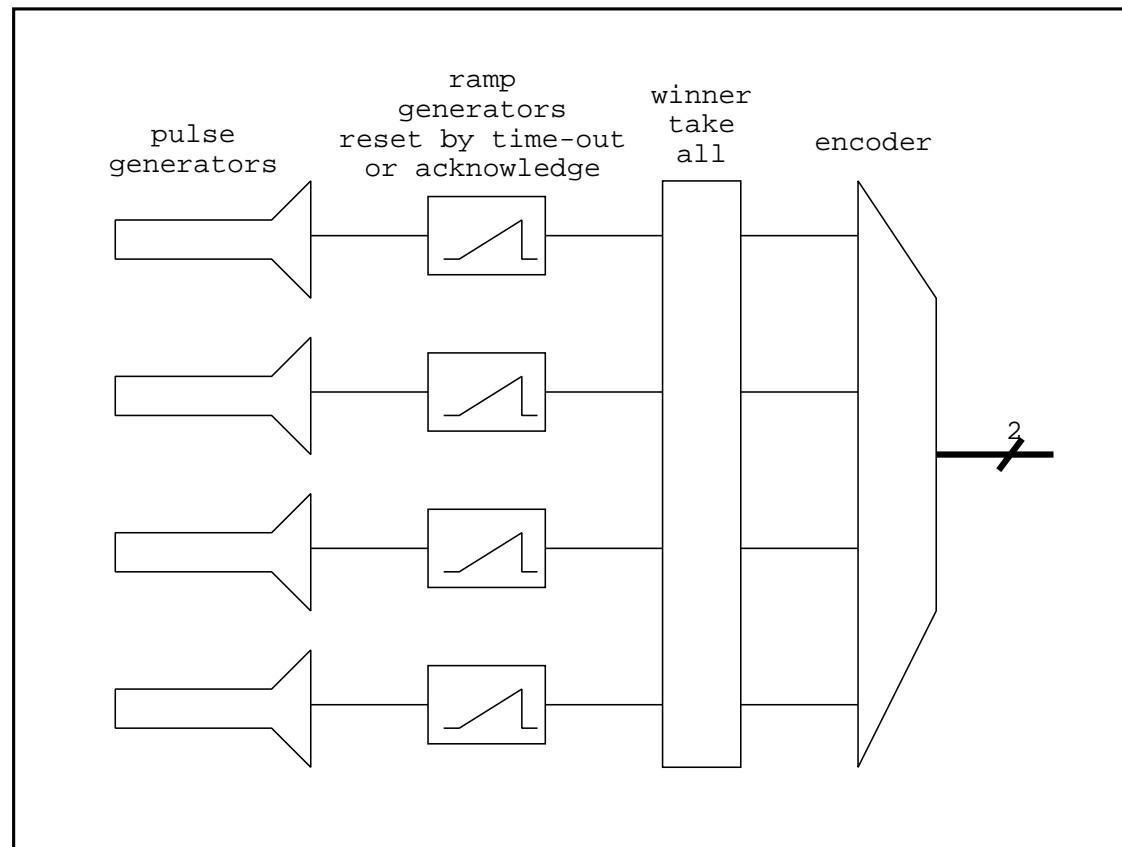
error detection encoding and collision discarding





# Age versus Loss Trade Off

A tunable compromise







## High Speed LVDS Serial AER

- + compact connector
- + high speed ( $\sim 100$ Mevents/s)
- + flexible word length
- synchronous
- power hungry (relatively)