draft / to Future work

Transmission systems for IEEE1394 and related signals using infra-red radiation

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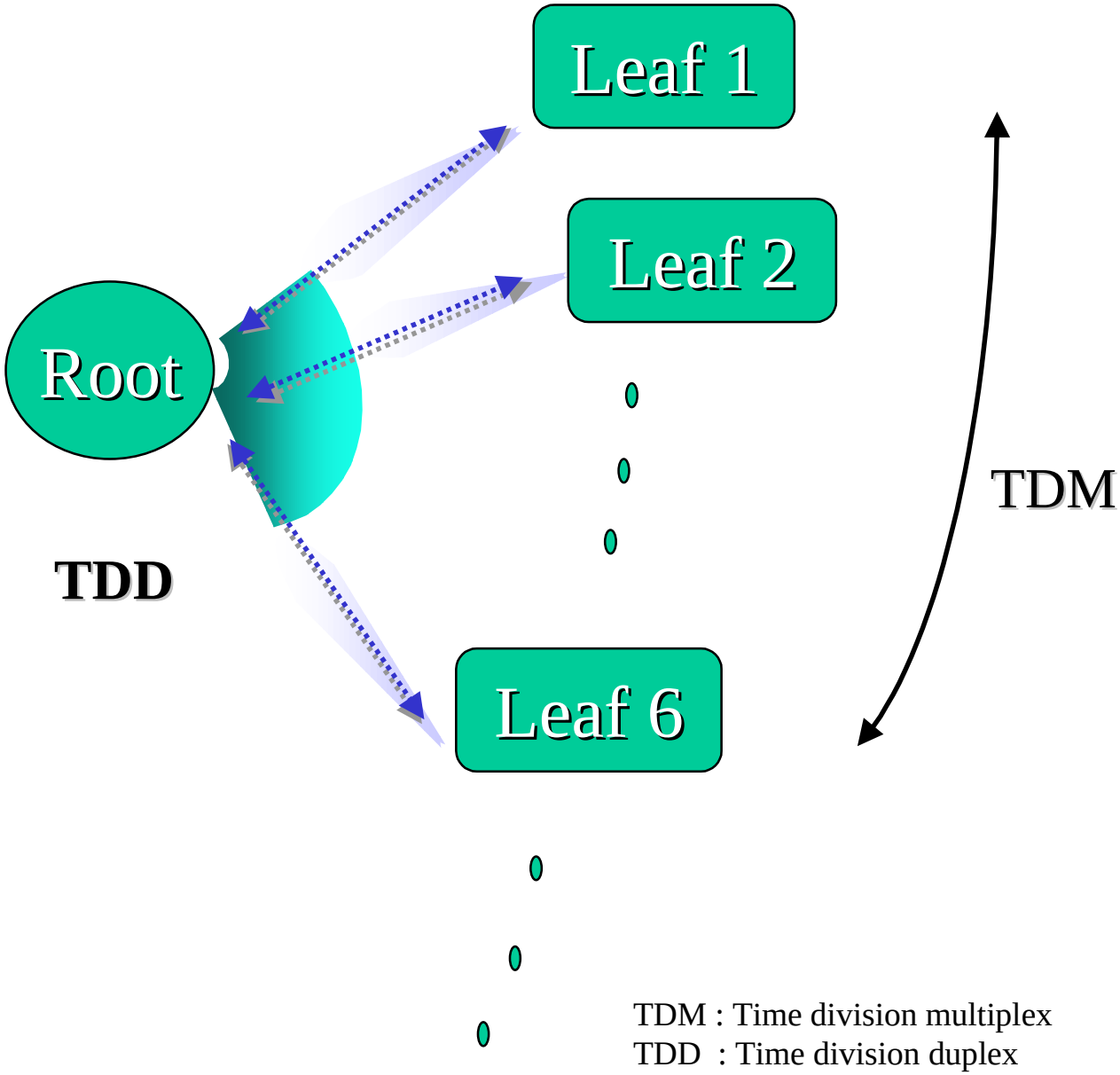
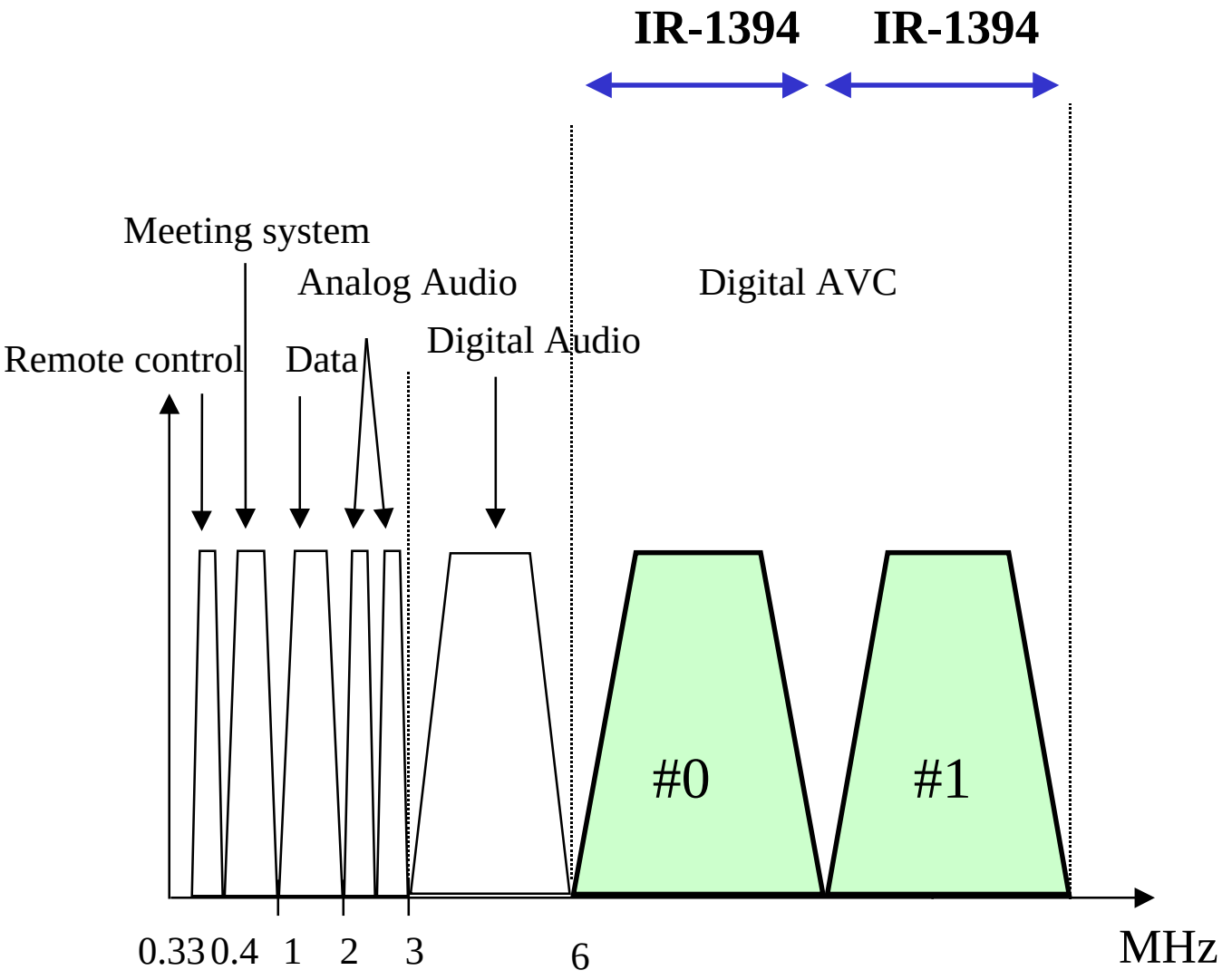
Topology



TDM : Time division multiplex
TDD : Time division duplex

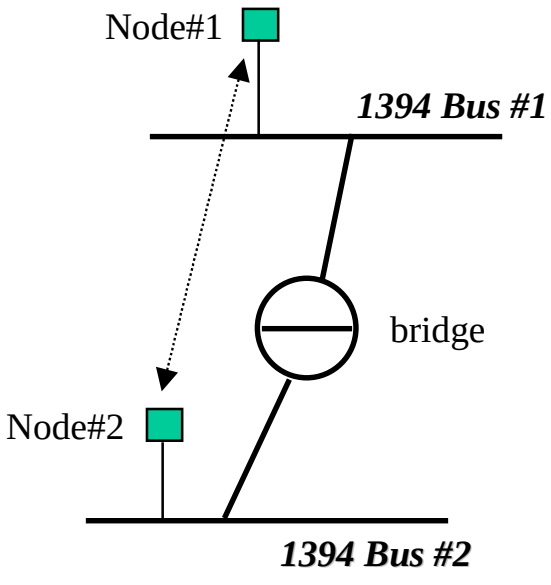
Sub-Carrier frequency allocation for infrared data transmission



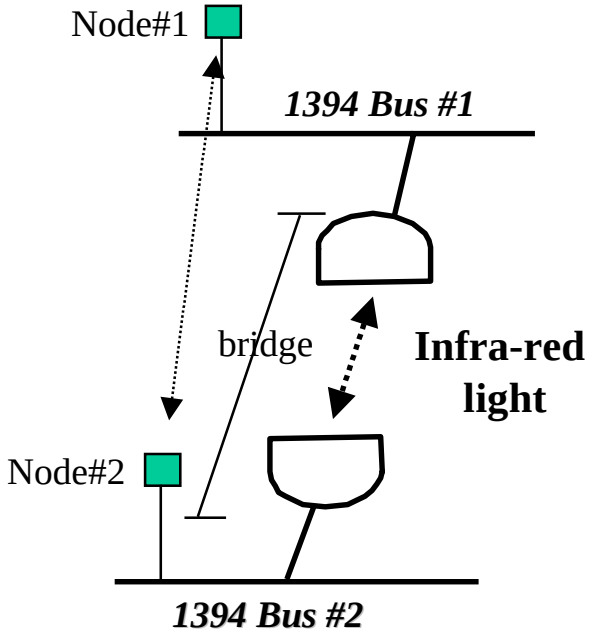
Infra-red transmission on protocol for IEEE1394

(Which is based on IEEE1394 bridge protocol)

Bridge model



Wireless model



Basic contents of Infra-red transmission systems for IEEE1394

Items	Content
Topology	Star type
Duplex	TDD (Half duplex)
Switching	TDM
Frequency band	above 6MHz, 2bands
Transfer rate	25, 50, 100 Mbps
Protocol	IEEE1394 bridge protocol

Why were bridge protocols applied ?

1. Delay time

Bus protocols did not permit a delay time of a data transmission. A delay time interfered with isochronous data transfer and arbitration. A delay time should be managed by bus bridge.

2. Data overflow

When a data transfer rate is lower than 100Mbps, the band resource should be managed in order to avoid overflow problem.

3. Bus reset

IEEE 1394 bus protocols are based on plug and play. Whenever an infra-red path is cut off, bus reset always occurs all over the bus. Bus reset should be controlled to keep a stable connection.