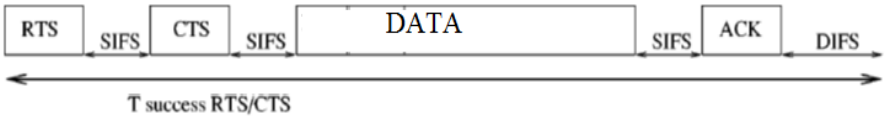
Comparing analytical and actual throughput of IEEE 802.11 DCF mode

A network using IEEE 802.11 DCF mode as MAC protocol is considered. There are n nodes in the network where they all always have packets to transmit. It is assumed that all the nodes can hear all the transmissions, including RTS, CTS, DATA, and ACK.

The system parameters are given below and the number of nodes are varying from 2 to 10 with steps of 2 (n=2,4,6,8,10).

Slot time = 1 time unit;
DIFS = 2 time unit;
SIFS = 1 time unit;
ACK = 1 time unit;
Packet transmission time = 10 time units.
Propagation delay: ignored;
RTS and CTS = 1 time unit;
CWmin = 2 time unit;
CWmax = 2^6 time unit;
Average packet payload size = 100 bytes.



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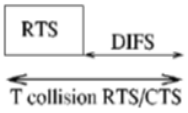

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