

Working of NAV (Virtual carrier sensing)

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Some basics about Duration/ ID field

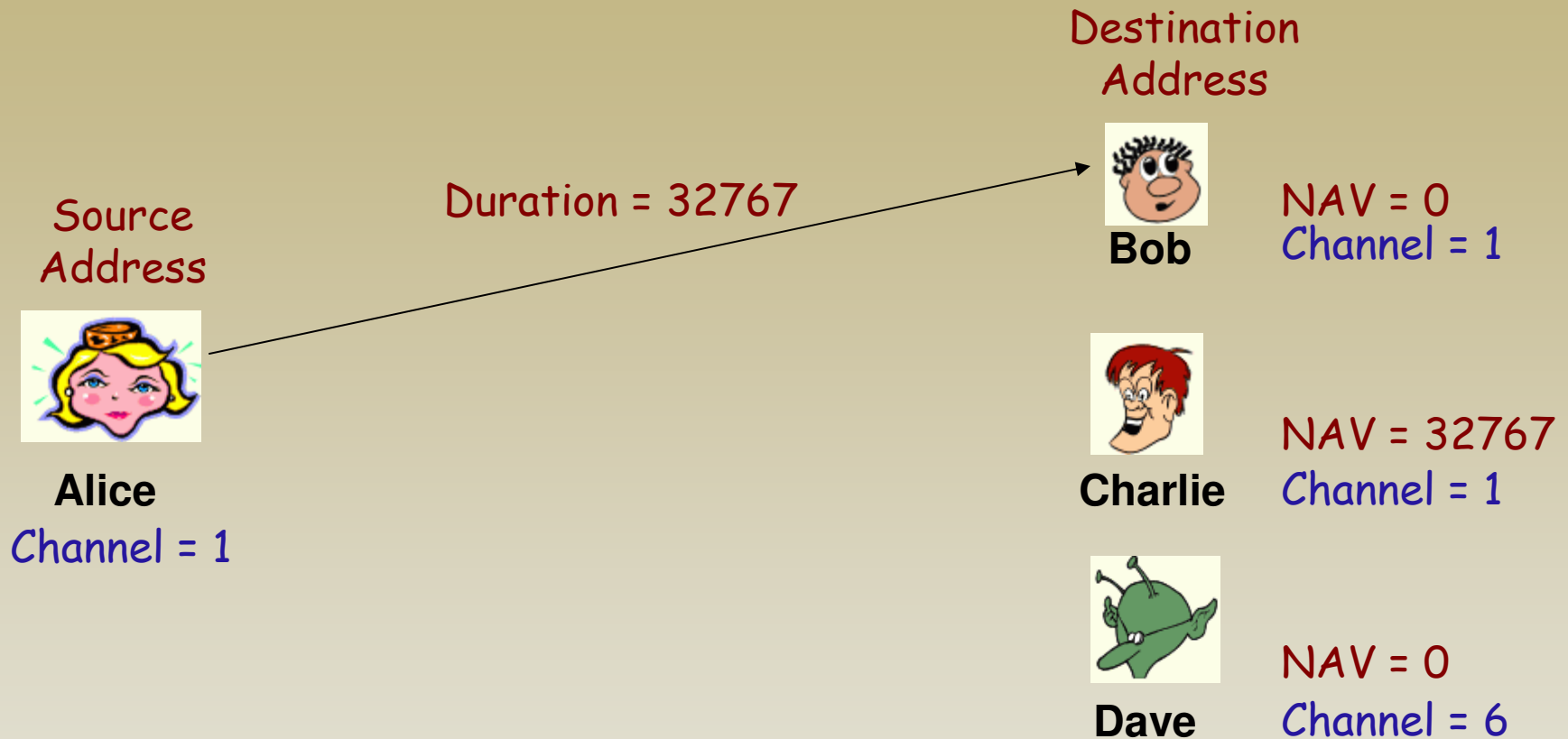
- ◆ What does it contain?
 - In control frames of subtype PS-Poll (power save) the field contains the AID (Association ID) of the station who transmitted the frame.
 - In all other frames duration field value is used to set the NAV according to some rules

Bit 15	Bit 14	Bits 13-0	Usage
0		0-32 767	Duration
1	0	0	Fixed value within frames transmitted during the CFP
1	0	1-16 383	Reserved
1	1	0	Reserved
1	1	1-2 007	AID in PS-Poll frames
1	1	2 008-16 383	Reserved

NAV : Usage and Implementation

- ◆ NAV (Network Allocation Vector) is the mechanism provided for virtual carrier sensing in 802.11
- ◆ NAV maintains the prediction of future traffic on the medium
- ◆ NAV is a counter which counts down to Zero at uniform rate. Counter = Zero is indication of Idle medium
- ◆ STA receiving valid frame updates the NAV with information in Duration field only if
 - NAV in the packet is $>$ current NAV value AND
 - packet is NOT addressed to receiving station
- ◆ When operating in CFP mode, some more condition may set/ reset the NAV value




Who will modify NAV?



- ◆ If Alice is sending a packet to Bob with duration field set to 32767

Who will modify NAV?

◆ NAV after receiving packet from Alice

-  Bob : Receives the packet, NAV=0
-  Charlie: Receives the packet, NAV=32767
-  Dave: Doesn't receives the packet, NAV=0

- ◆ Note: NAV=0; means the Station can send packet. NAV=x ($x > 0$) means for x time units station cannot send any packets.

Usages:

- ◆ To solve hidden node problem

Thank You

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