test cases for AccEcn during negotiation

① ECE、CWR 、AE setting during negotiation

	SENDER	RECEIVER
case 1	AccEcn	NoEcn
case 2	AccEcn	ClassicEcn
case 3	AccEcn	EcnPp
case 4	NoEcn	AccEcn
case 5	ClassicEcn	AccEcn
case 6	EcnPp	AccEcn
case 7	AccEcn (SYN:ECT0)	AccEcn (SYN RCV:ECT0)
case 8	AccEcn (SYN:ECT0)	AccEcn (SYN RCV:CE)
case 9	AccEcn (SYN:ECT0)	AccEcn (SYN RCV:ECT1)
case 10	AccEcn (SYN:ECT0)	AccEcn (SYN RCV:NoECT)

For SYN
case 1|2|3|7|8|9|10 should set ECE|CWR|AE in TCP header
case 5|6 should set ECE|CWR no AE in TCP header
case 4 should set no ECE no CWR no AE in TCP header

For SYN/ACK
case 1|4 should set no ECE no CWR no AE in TCP header
case 2|3|5|6 should set ECE in TCP header
case 7 AE
case 8 AE|CWR
case 9 CWR|ECE
case 10 CWR

A	B	SYN A->B			SYN/ACK B->A			Feedback Mode
		AE	CWR	ECE	AE	CWR	ECE	
AccECN	AccECN	1	1	1	0	1	0	AccECN (Not-ECT on SYN)
AccECN	AccECN	1	1	1	0	1	1	AccECN (ECT1 on SYN)
AccECN	AccECN	1	1	1	1	0	0	AccECN (ECT0 on SYN)
AccECN	AccECN	1	1	1	1	1	0	AccECN (CE on SYN)

For ACK

all cases should set ACK in last ACK packet in tcp header

besides, for case 7|8|9|10,
setting ECT0 in SYN+ACK packet at receiver side
cast 7 received ECT0 in SYN+ACK
cast 8 received CE in SYN+ACK
cast 9 received ECT1 in SYN+ACK
cast 10 received NotEct in SYN+ACK

the ACE field
case 7: 0b100
case 8: 0b110
case 9: 0b011
case 10: 0b010

ACE on ACK of SYN/ACK	IP-ECN codepoint on SYN/ACK inferred by server	Initial s.cep of server in AccECN mode
0b000	{Notes 1, 2}	Disable ECN
0b001	{Notes 2, 3}	5
0b010	Not-ECT	5
0b011	ECT(1)	5
0b100	ECT(0)	5
0b101	Currently Unused {Note 3}	5
0b110	CE	6
0b111	Currently Unused {Note 3}	5

Table 3: Meaning of the ACE field on the ACK of the SYN/ACK

the commit is available here:
https://github.com/dwy927/ns-3-dev-git/commit/e8b433e62f888e2e1789789b57d9ae6fdd8fe6bd

issues meeting during this test:
https://github.com/dwy927/ns-3-dev-git/commit/83d47a194be3c776d6697d684dbaa71ddd6327e4

PeekU8(uint8_t offset)

i+offset
offset :16
offset: 24

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② test ECT setting during negotiation

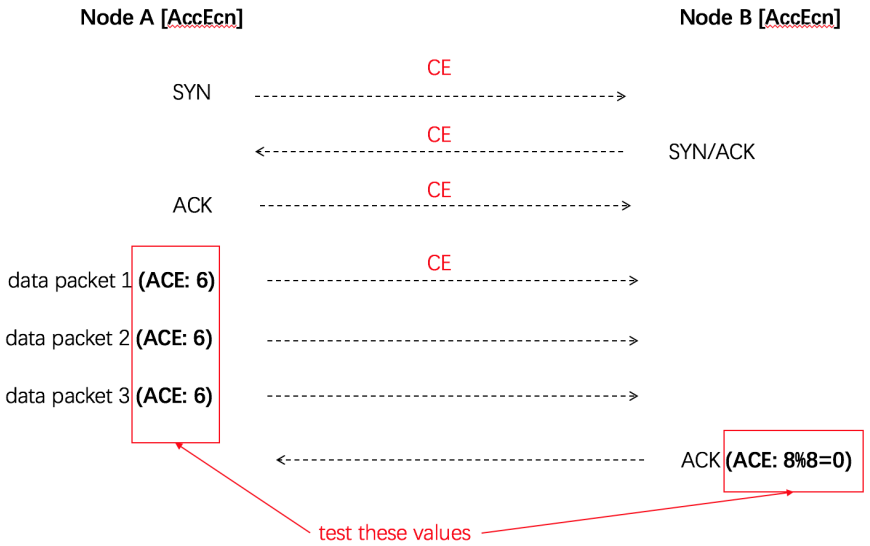
for case 7 - 10: ECT setting will be feedback information by ECE、CWR 、AE in Tcp header, so no need to test again

for case 1 - 6: ECT setting has been test by classicEcn and EcnPp, also no need to test again

③ after negotiation, test ECN feedback using ACE field and AccEcn Option

1. whether counter increase properly
2. Encode the counter without the AccEcn option
3. Encode the counter with the AccEcn option
4. Decode the counter without the AccEcn option
5. Decode the counter with the AccEcn option

Test whether counter increase properly
Test Encoding of ACE
Test Encoding of AccEcn Option



the commit:
https://github.com/dwy927/ns-3-dev-git/commit/5e6d6757edca54d3755ca42fc881cfcdeabbbccc#diff-1defaac973804adac033ff061b74b935L445

ACE and AccEcn Option decoding test
add trace sink or AccEcn counter
https://github.com/dwy927/ns-3-dev-git/commit/cdf83ad688f0a8bf0989b29752d00c4ae0e49941

test -- done
example
document

August 7

August 8 to14 - Prepare final website for GSoC and address review comments for AccEcn