Reuse Once Reuse Once

Reuse Once

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Reuse Once

 $sk_{AP} = m_{AP}$ $sk_{AP} = N_{AP}$

 $sk_{AP} = N_C$

 $m_{AP} = m_{AP}$ $m_{AP} = N_{AP}$

 $m_{AP} = N_C$ $N_{AP} = N_{AP}$

 $N_{AP} = N_C$ $N_C = N_C$

Case	Nonce	IA_AP	IA_C	NIA_AP	NIA_C	IAK_AP	IAK_C	NIAK_AP	NIAK_C	S_AP	S_C	KF_AP	KF_C
No misgeneration	N/A	√	1	✓	✓	1	✓	√	1	1	1	✓	1
Leak Always	sk_C	X	X	X	X	X	X	X	X	X	X	1	1
Leak Always	m_C	X	X	X	X	X	X	X	X	X	X	1	1
Leak Always	sk_{AP}	X	X	X	X	X	X	X	X	X	X	1	1
Leak Always	m_{AP}	X	X	X	X	X	X	X	X	X	X	1	1
Leak Always	N_{AP}	1	1	✓	√	1	1	✓	1	1	1	1	1
Leak Always	N_C	1	1	✓	1	1	1	✓	1	1	1	1	1
Reuse Always	sk_C	1	1	✓	√	1	1	✓	1	1	1	1	1
Reuse Always	m_C	1	1	✓	√	1	1	✓	1	1	1	1	1
Reuse Always	sk_{AP}	1	1	✓	✓	1	1	✓	1	1	1	1	1
Reuse Always	m_{AP}	✓	1	✓	✓	1	1	✓	1	1	1	1	✓
Reuse Always	N_{AP}	✓	1	✓	✓	1	1	✓	1	1	1	1	✓
Reuse Always	N_C	1	1	✓	✓	1	1	✓	1	1	1	1	✓
Reuse Once	$sk_C = sk_C$	1	1	✓	√	1	1	✓	1	1	1	1	1
Reuse Once	$sk_C = m_C$	1	1	✓	√	1	1	✓	1	1	1	1	1
Reuse Once	$sk_C = sk_{AP}$	1	1	✓	√	1	1	✓	1	1	1	1	1
Reuse Once	$sk_C = m_{AP}$	1	1	✓	✓	1	1	✓	1	1	1	1	1
Reuse Once	$sk_C = N_{AP}$	X	X	X	X	X	X	X	X	X	X	1	1
Reuse Once	$sk_C = N_C$	X	X	X	X	X	X	X	X	X	X	1	1
Reuse Once	$m_C = m_C$	1	1	✓	✓	1	✓	✓	1	1	1	1	1
Reuse Once	$m_C = sk_{AP}$	1	1	✓	✓	1	✓	✓	1	1	1	1	1
Reuse Once	$m_C = m_{AP}$	1	1	✓	✓	1	✓	✓	1	1	1	1	1
Reuse Once	$m_C = N_{AP}$	X	Х	Х	Х	X	Х	X	X	X	X	1	1
Reuse Once	$m_C = N_C$	X	Х	Х	Х	X	Х	X	X	X	X	1	1
Reuse Once	$sk_{AP} = sk_{AP}$	1	1	✓	✓	1	✓	✓	1	1	1	1	1
		_								_			

X

X

X

X

X

X

X

Table 1: Detailed results for WPA3 - Nonces and keys