

A5. Cover sheet.

1. NUSH Hash

2. Collision-Resistant Hash functions. Proposed security level:

a) *High*. Security level equals to $2^{L/2}$ elementary operations, where L is the hash value length (bits), i.e. at least 2^{256} . An elementary operation is equivalent to hash computation, writing to (reading from) memory and comparison of hash values. Regular birthday attack.

b) *Normal*. Security level equals to $2^{L/2}$, where L is hash value length (bits), i.e. at least 2^{128} . An elementary operation is equivalent to hash value computation, writing to (reading from) memory and comparison of hash values.

Proposed environment: An eavesdropper knows all the details of the algorithm, can get and write down in memory as many as $2^{L/2}$ different hash values. He can also search through the memory in an efficient way such as a dichotomic search, lexicographic search etc.

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