

## A2. Cover sheet.

### 1. NUSH Stream

2. Synchronous stream cipher. Proposed security level:

a) *High*. Complexity of a key reconstruction equals to  $10^{61}$  elementary operations with memory requirements for about  $10^{18}$  output keystream bits. An elementary operation is equivalent to generation, writing to (reading from) memory and comparison of two output keystream blocks as long as necessary for key reconstruction..

b) *Normal*. Complexity of a key reconstruction equals to  $10^{22}$  elementary operations with memory requirements for about  $10^{18}$  output keystream bits. An elementary operation is equivalent to generation, writing to (reading from) memory and comparison of two output keystream blocks as long as necessary to reconstruct a key.

Proposed environment: An eavesdropper knows all the details of the algorithm, can get and write down in memory at most as many as  $10^{18}$  output keystream bits generated by the same key. He can also search through the memory in an efficient way such as a dichotomic search, lexicographic search etc.

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