

HMAC

Defⁿ :- It consists of a message authentication code using hashing function.

Proof :- Since, the hashing functions to be used in here are provably secure (Merkle Damgård and collision resistant functions).

HMAC is automatically provable secure.

HMAC tag for m

$$m = H_{1,v}^s((K \oplus \text{opad}) \parallel H_{1,v}^s((K \parallel \text{ipad}) \parallel m))$$

This technique is the industry standard & used for designing algorithms.