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IoT light weight (LWT) crypto functions (Article) (Open Access)

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Abstract

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We are in the era of IoT and 5G technologies. IoT has wide range of applications in Smart Home, Smart cities, Agriculture, Health etc. Due to that, the number of connected sensor devices become increased. Along with that security of these devices become a challenging issue. By the next year there would be a great increase in the number of connected sensor devices. For the power constrained devices like sensors and actuators, they requires lightweight security mechanism. There are several Lightweight (LW) energy efficient Hashing techniques are available. They are photon, quark, spongent, Lesamnta- LW etc. These all are fixed length block sized and key sized LW hashing techniques. All transformation methods used today in LW hash function only support fixed block size and key size and requires high hardware requirements too. In this paper, we compare different types of LW hash families in terms of their design and introduce the possibility of variable length hash function using Mersenne number based transform.

Author keywords

Diffusion Energy efficiency Lightweight hashing techniques Mersenne number

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