

Erasure codes, such as LT and Raptor codes, are designed for the purpose of erasure-resilient distribution of data over computer networks. To achieve a small reception overhead, however, LT and Raptor codes must be used with a large design length  $k$ , making these codes unsuitable for real-time applications. In this paper, we propose a new class of erasure codes based on Reed-Solomon codes that unlike other Reed-Solomon-based erasure codes are rateless and also, unlike other rateless codes, guarantee zero overhead even for small  $k$ . Moreover, they have a reasonable computational complexity of coding when  $k$  is not too large. In fact, a practical implementation of subfield subcodes of Reed-Solomon codes with arbitrarily large block lengths is presented.