

# Fountain Reprogramming Protocol: a Reliable Data Dissemination Scheme for Wireless Sensor Networks Using Fountain Codes

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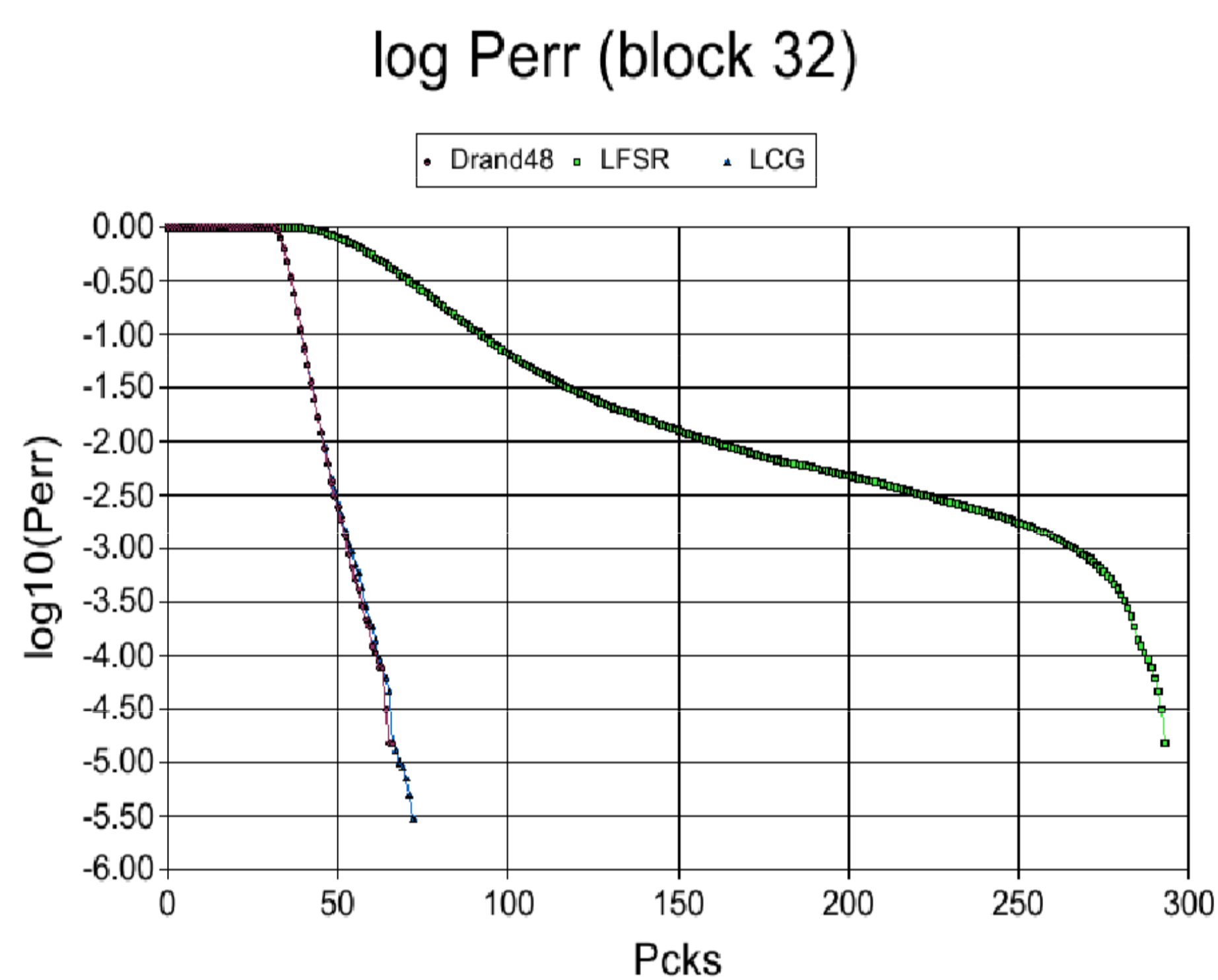
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An in-network reprogramming protocol, which uses a Fountain Code we designed specifically to meet the needs of sensor network reprogramming. This code is designed to maintain a high efficiency, in terms of overhead, in the face of small packet sizes and typical program sizes.

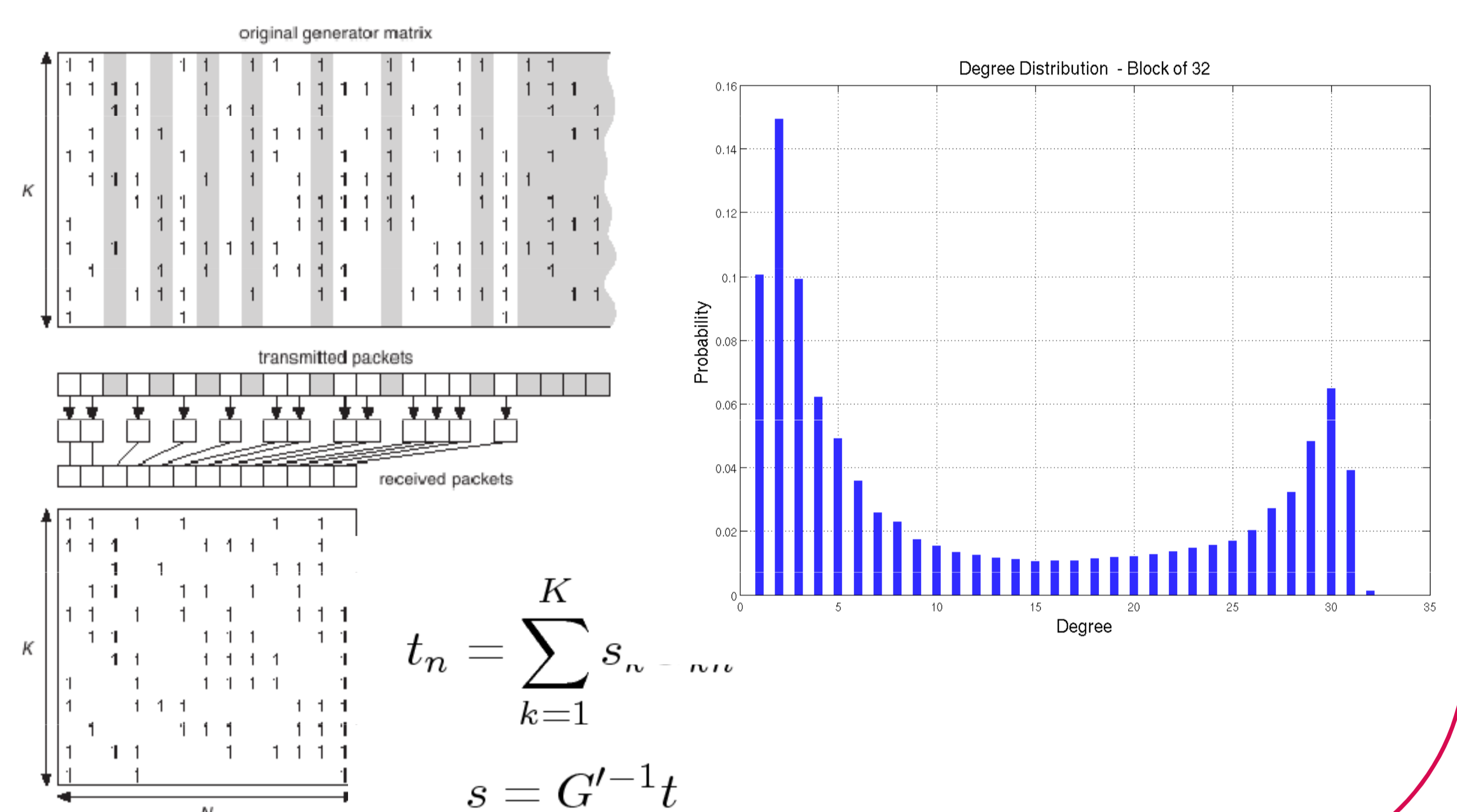
## Random Number Generator

- LSFR is fast but achieves poor performance
- LCG Achieves best performance but requires high computational effort



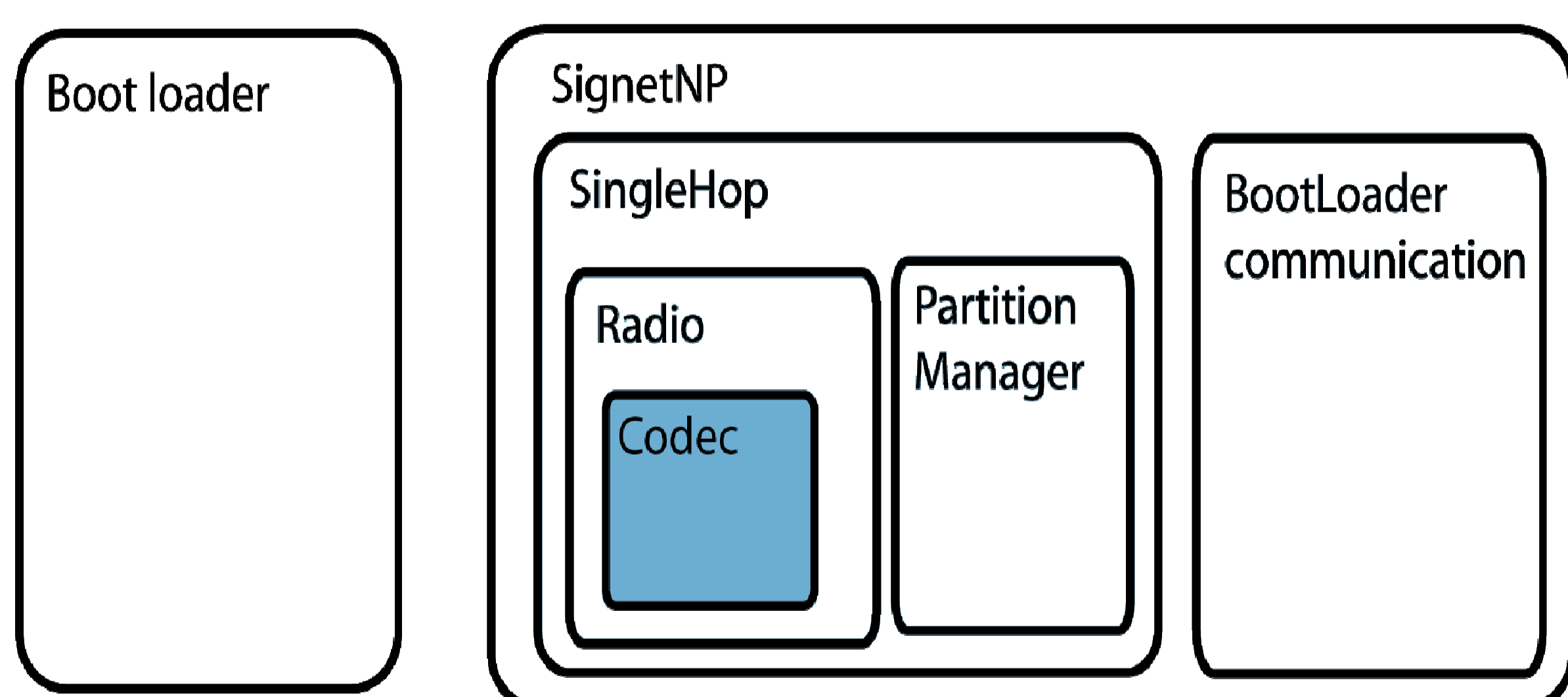
## Data Encoding

- Random linear fountain codes require small computational effort at the encoder/decoder
- Few (or no) overhead packets needed
- Only few retransmissions even on noisy channel

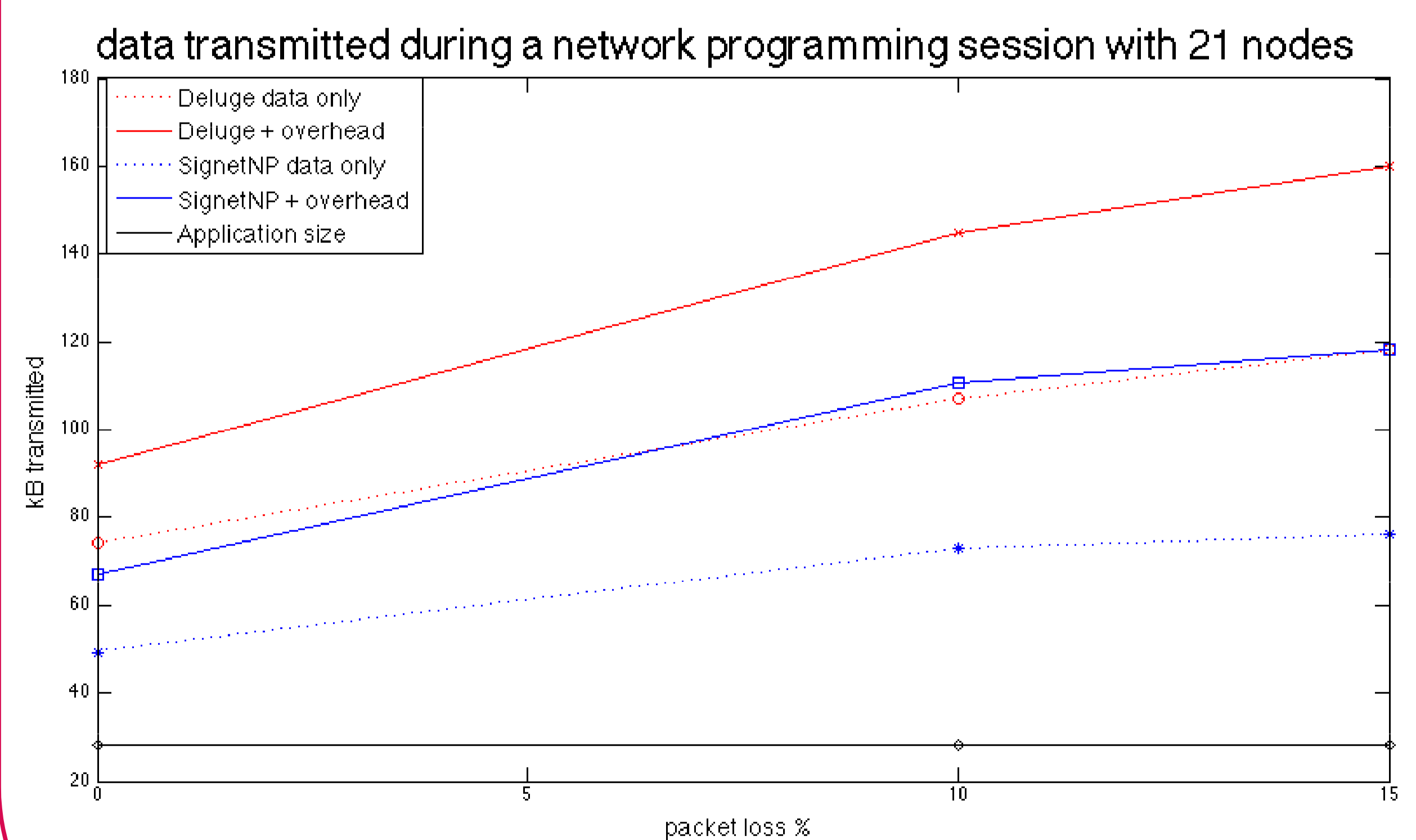


## System Architecture

- Modular architecture
- Easy to port to other platform
- Flexible bootloader communication
- Flexible memory management



## Network load



Implementation for EyesIFX and TmoteSky (telosb) platforms. Available soon for TinyOS 2  
Come and visit our website: <http://www.dei.unipd.it/research/signet>



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