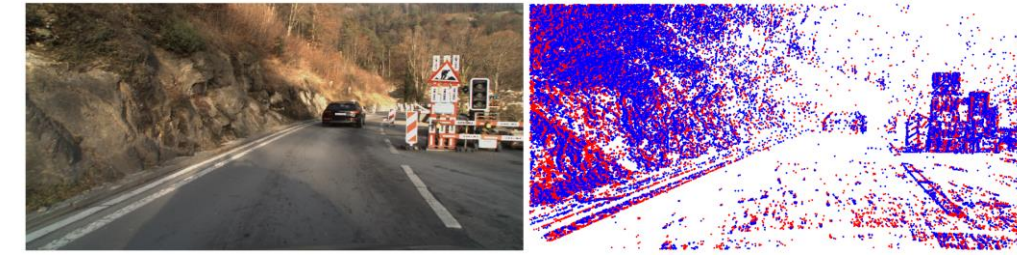


1. Introduction

- The paper introduces a novel entropy coding-based method for encoding AsynchRonous Event Sequences (ARES).
- Each ARES is rearranged as \rightarrow set of Same-Timestamp (ST) subsequences \rightarrow set of data structures \rightarrow set of data elements.
- Triple Threshold Partition (TTP) algorithm was modified to employ an Adaptive Markov Model (AMM) to encode each data element.
- New prediction strategies.
- New threshold initialization.



2. Proposed Method

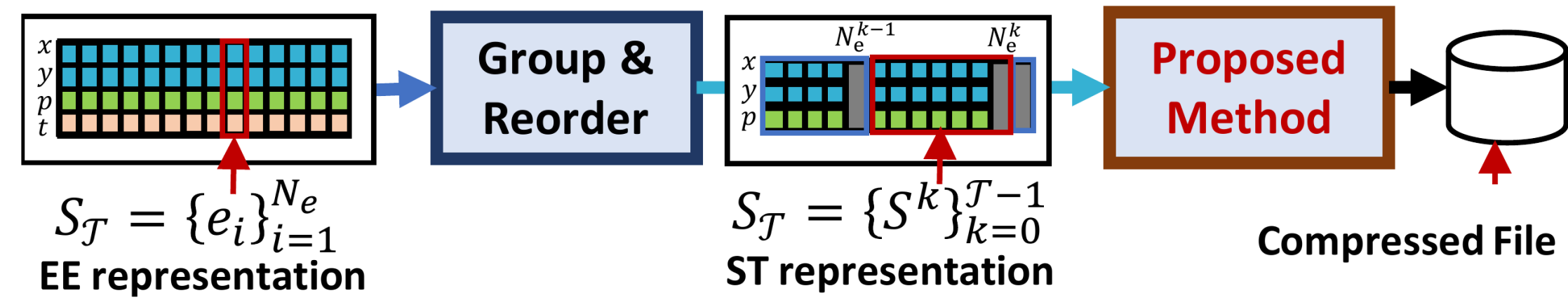


Figure 1. The event coding framework

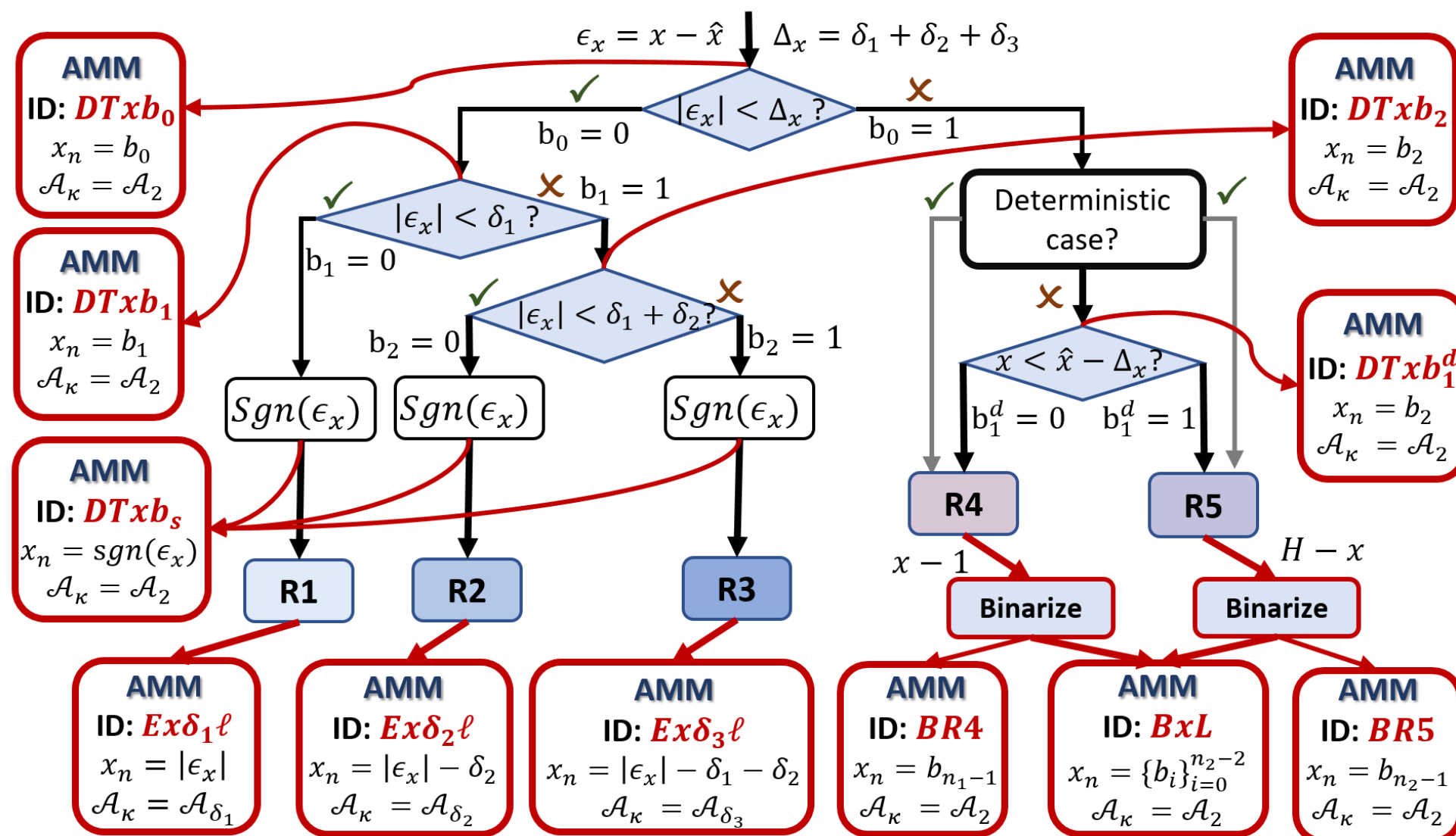


Figure 2. The modified TTP_x version.

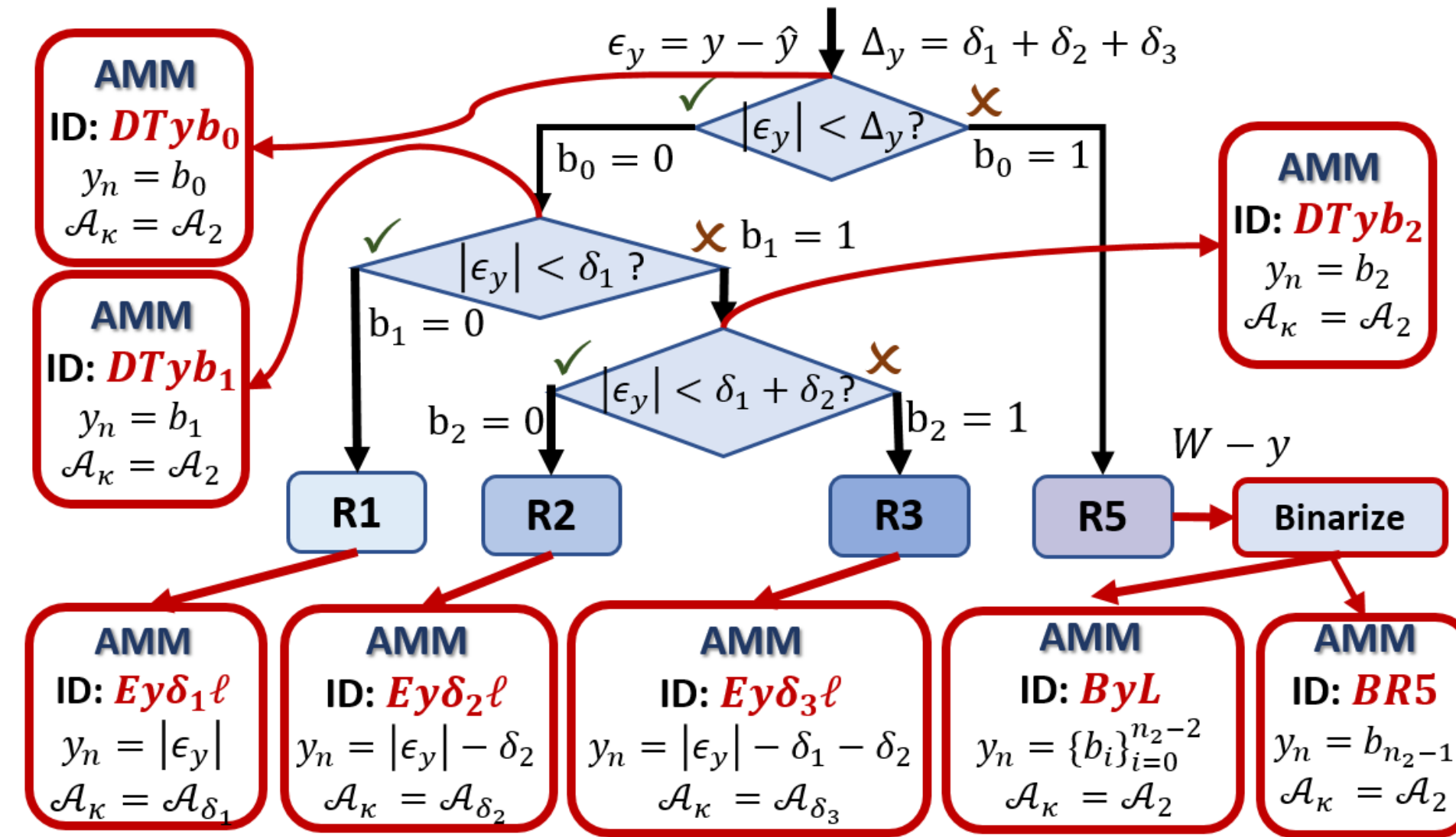


Figure 3. The modified TTP_y version.

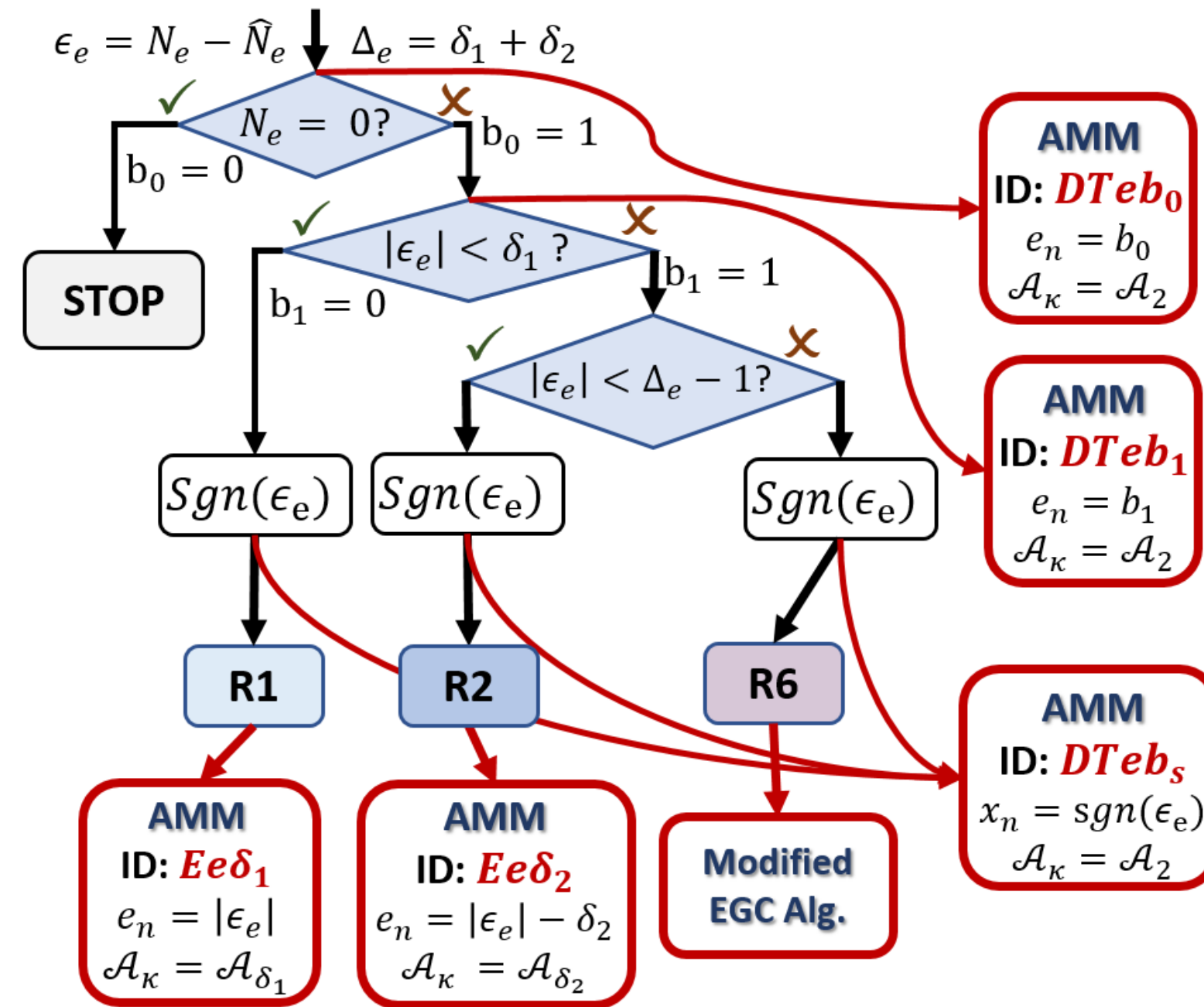
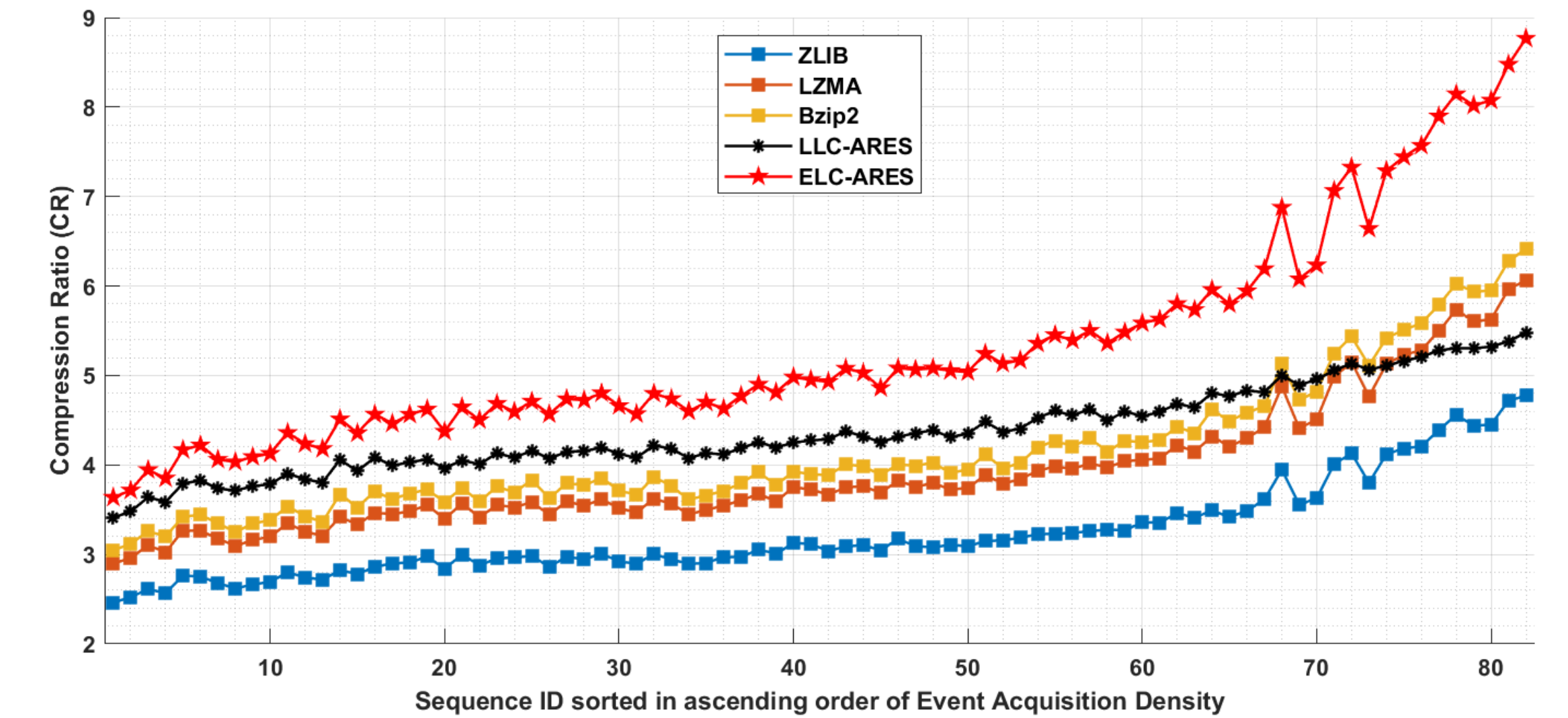


Figure 4. The modified TTP_e version.

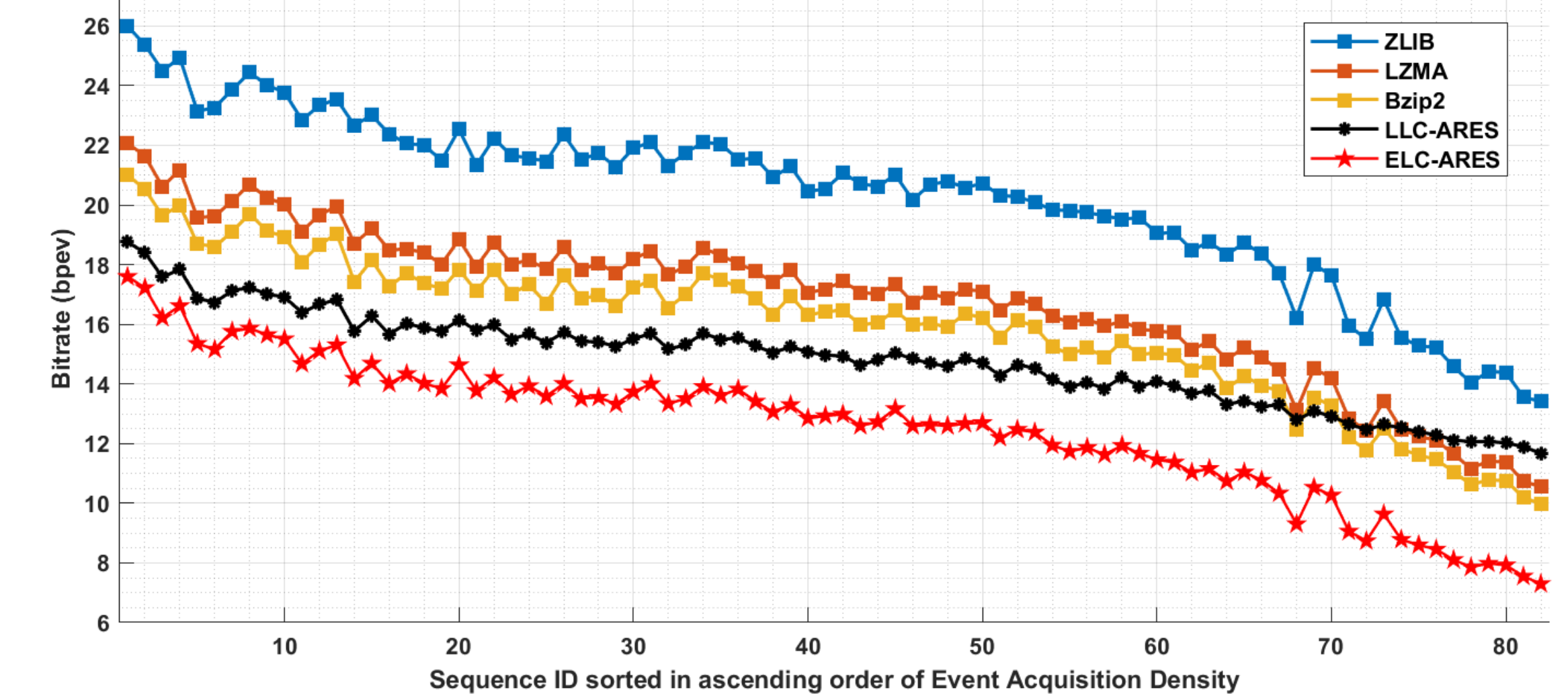
3. Experimental Evaluation

Table 1. Average coding performance over DSEC

Codec	ZLIB	LZMA	Bzip2	LLC-ARES	ELC-ARES
CR	3.225	3.922	4.144	4.371	5.306
BR	20.32	16.80	15.91	14.82	12.58



Compression Ratio (CR)



Bitrate (BR) bits per event

4. Conclusions

ELC-ARES provides a 21.4% improvement compared with LLC-ARES, and 28.03%, 35.27%, and 64.54% compared with Bzip2, LZMA, and ZLIB, respectively.