

An Alternative Delta Time encoding for CCNx using Interval Time from RFC5497

draft-gundogan-ccnx-timetlv-01
ICNRG, Virtual Interim Meeting

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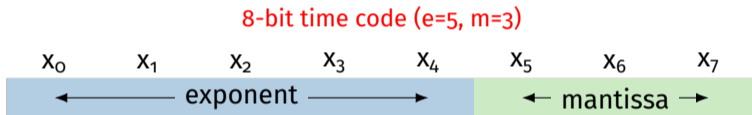
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Updates on Section 4: Compressed Time Encoding

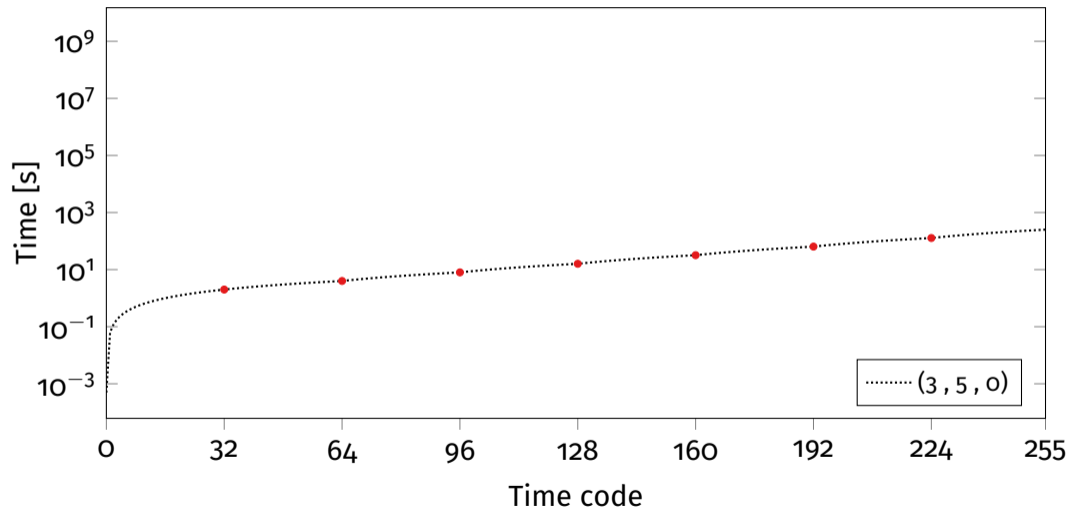
- ▶ Update formulae based on IEEE 754 (Thanks to Marc for this hint)
- ▶ Add sample values to show time ranges of the selected configuration



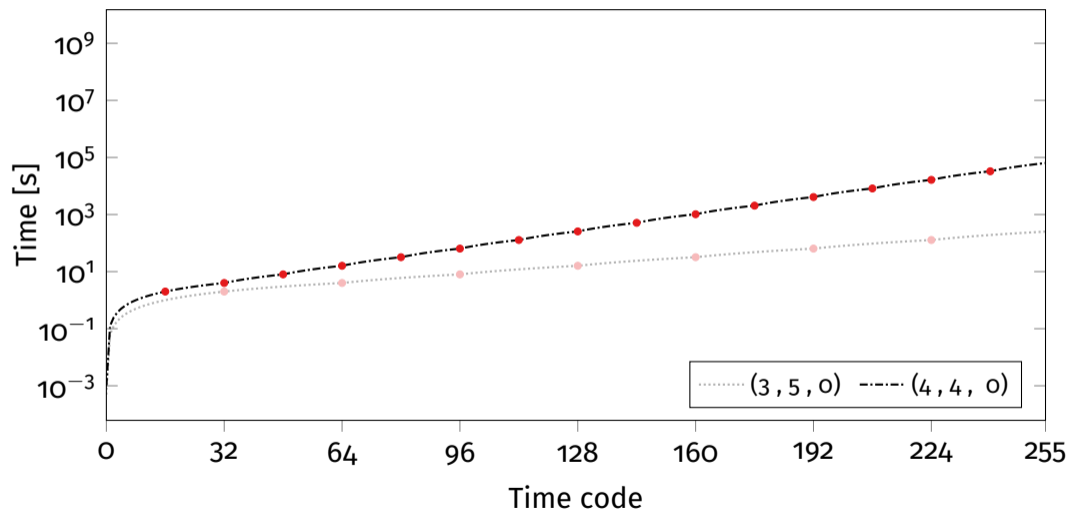
$$t(e, m, b) = \begin{cases} \left(0 + \frac{m}{m_{\max}}\right) \cdot 2^{(1+b)} & e = 0 \quad \text{subnormal} \quad (1) \\ \left(1 + \frac{m}{m_{\max}}\right) \cdot 2^{(e+b)} & e > 0 \quad \text{normalized} \quad (2) \end{cases}$$

time value
in seconds

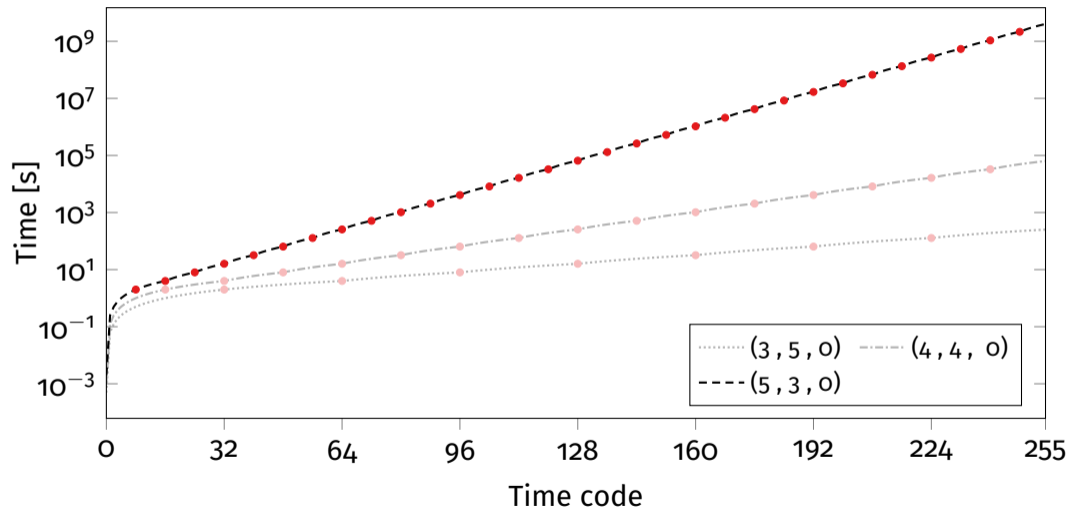
Precision & Range of Selected Configurations (exp., mant., bias)



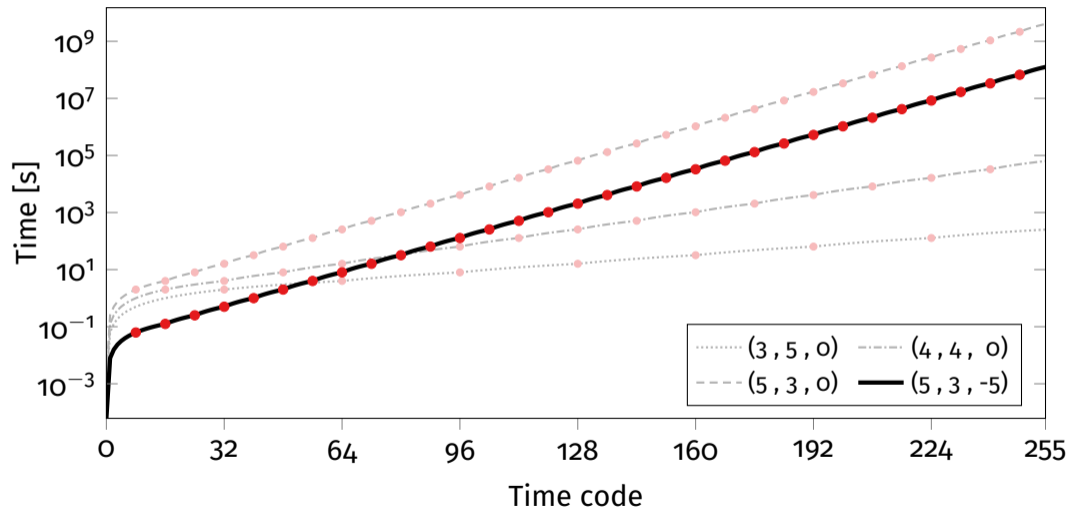
Precision & Range of Selected Configurations (exp., mant., bias)



Precision & Range of Selected Configurations (exp., mant., bias)



Precision & Range of Selected Configurations (exp., mant., bias)



Updates on Section 5: Protocol Integration

- ▶ Compression for Interest Lifetime (IL) & Recommended Cache Time (RCT)
- ▶ RCT turns into relative time in compressed form
- ▶ Use compressed time encoding, if `TLV Length == 1`

Alternative Integrations

- ▶ Nested TLV (likely to introduce overhead)
- ▶ New Top-TLV variants, e.g., Interest-Lifetime-Compressed

Next Steps

Further discussion needed for:

- ▶ Protocol integration

Based on feedback from Marc:

- ▶ Add table of all time values for (5 , 3 , -5) to appendix
- ▶ Provide pseudo algorithm to convert to and from time codes in appendix

Ready for RG adoption?