

8 Conclusions

A new low complexity, multi-millisecond integration time maximum likelihood bit synchronization method for GLONASS and GPS was developed. Our algorithm showed improved noise resilience and lower error rate, at a complexity level not much higher than the histogram algorithms. Since it naturally works on 3 ms samples the average processor load during the synchronization is expected to drop.

While the algorithm was developed to be used on 3 ms correlation samples it can easily be extended to work with different integration time lengths, given that the method used to track carrier and code phase of the signal is able to perform reliably using those longer integration times in the presence of data bit signs inversions.

This algorithm was developed in the context of the development of a mixed system multiantenna GPS/GLONASS embedded receiver. Implementation of the algorithm is under way in order to reduce the required processor load of the system while at the same time improving performance under low C/No ratio conditions.

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