# Executive Summary

## Architectural Overview

The architecture of the program consists of distinct kernels for separates tasks such as a cumulative histogram and reprojection on the image. Furthermore, the program contains features such as automatic bit depth detection with automatic buffer size allocation. In combination with this the program can select from 2 parallel methods for cumulative addition (Hillis steele & Blelloch) and a serial implementation

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| --- | --- | --- | --- | --- | --- | --- |
| Time of execution | Serial | Reduction addition using privatisation | Hillis-steele | Double buffered Hillis-steele | Blelloch | Double buffered Blelloch |
| 1st | 320 ns | 1640 ns | 320 ns | 360 ns | 360 ns | 360 ns |
| 2nd | 320 ns | 8680 ns | 320 ns | 360 ns | 320 ns | 360 ns |
| 3rd | 360 ns | 1640 ns | 840 ns | 320 ns | 320 ns | 360 ns |
| Average Execution | 333 ns | 3986 ns | 493 ns | 346 ns | 333 ns | 360 ns |