Lab 3 – Timing Optimizations

# List of Optimizations

## Optimization 1:

Figure 1 - Summary of Paths

Table

Description automatically generated with medium confidence

### Critical Path:

* FIFO -> multout of timing

Figure 2 - Statistics showing Cell Data as 68% of the delay

Application, table, Excel

Description automatically generated

Figure 3 - Data Arrival Path Showing dataout[17] with 3.076 delay

Table

Description automatically generated

* Can infer the longest path of 3.076 is talking about the output data from the multipler
* Can infer it is talking about the fifo read data coming into the multipler and the output from the multiplier.

## Optimization 2:

Figure 4 - Summary of Paths and Statistics for Optimization 2

Application

Description automatically generated with medium confidence

### Critical Path:

* FIFO ram -> fifo\_rd\_data\_r
* Longest increment -> CELL of fifo dataout

# List of Code Changes

1. Registered the rd\_data\_out to fix the bottleneck from the rd\_data\_out to mult\_out critical path.