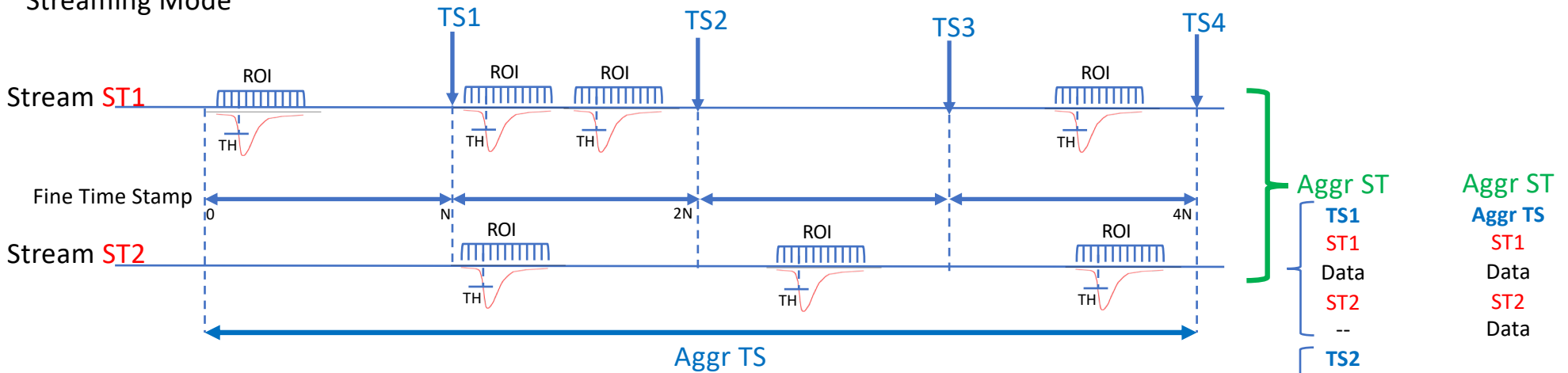


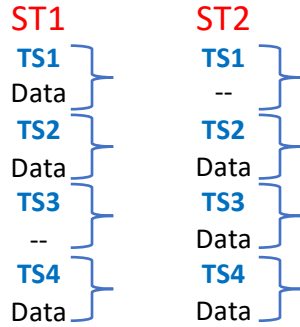
Triggered vs Streaming blocks

- In GlueX the L1 trigger creates about 100 kHz ($\sim 10 \mu\text{s}$ /trigger). This means that if we define a Streaming time slice of $10 \mu\text{s}$ there will, on average, be one good event in the data.
 - How much more junk data will be in this time slice?
- GlueX already blocks 40 events for transport from the ROC.
 - It seems reasonable we could make time slices even larger?
 - A $50 \mu\text{s}$ time slice corresponds to only a 20 kHz “event” rate.
- The larger the time slice –the more efficient DAQ becomes.
 - Less overhead in the data formatting – eg fewer headers
 - Larger blocks of data moved more efficiently in the back-end
 - Making sure there is at least one or more “events” in the slice can make processing more efficient as well.

Streaming Mode



Aggregation



Example (4ns Clock). Allow for a large

10 bit Fine time stamp -> 1024 ns

16 bit Fine time stamp -> 65536 ns

Using Large Time Slices is the more efficient Way to store data. As long as we make it easy To “peel” off data near the edge of the Time Slice during processing.

Aggr ST

- TS1
- ST1
- Data
- ST2
- ...
- TS2
- ST1
- Data
- ST2
- ...
- TS3
- ST1
- ...
- ST2
- Data
- TS4
- ST1
- Data
- ST2
- Data

Aggr ST
Aggr TS

- ST1
- Data
- ST2
- Data