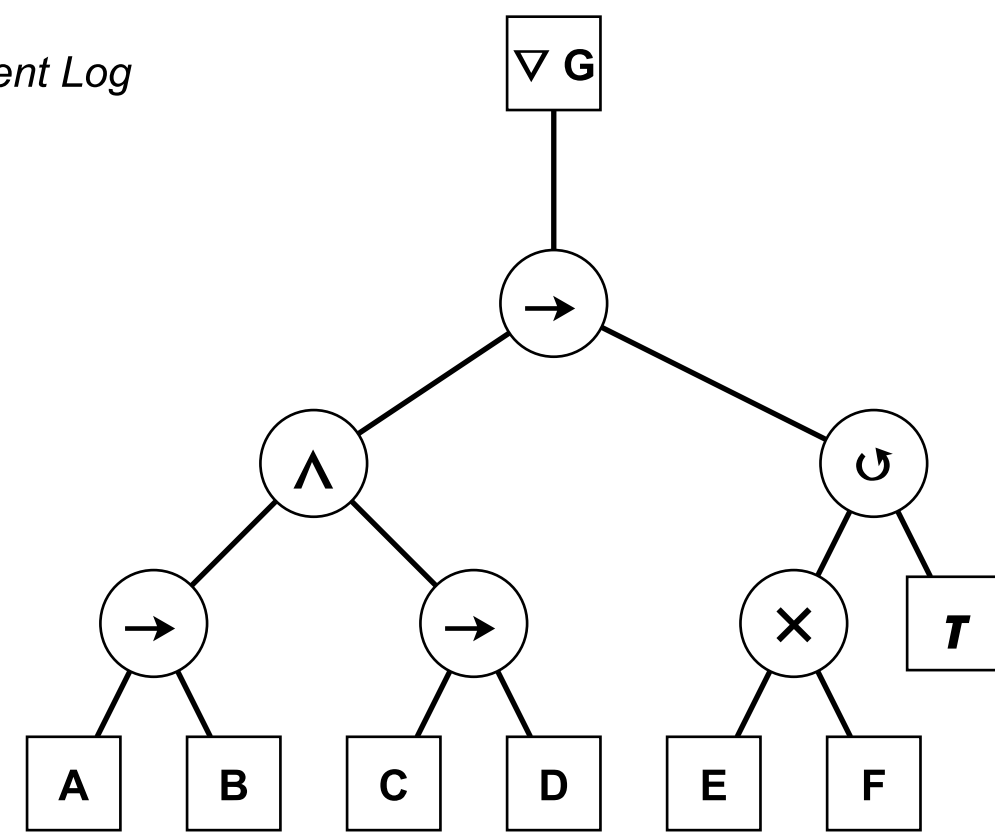
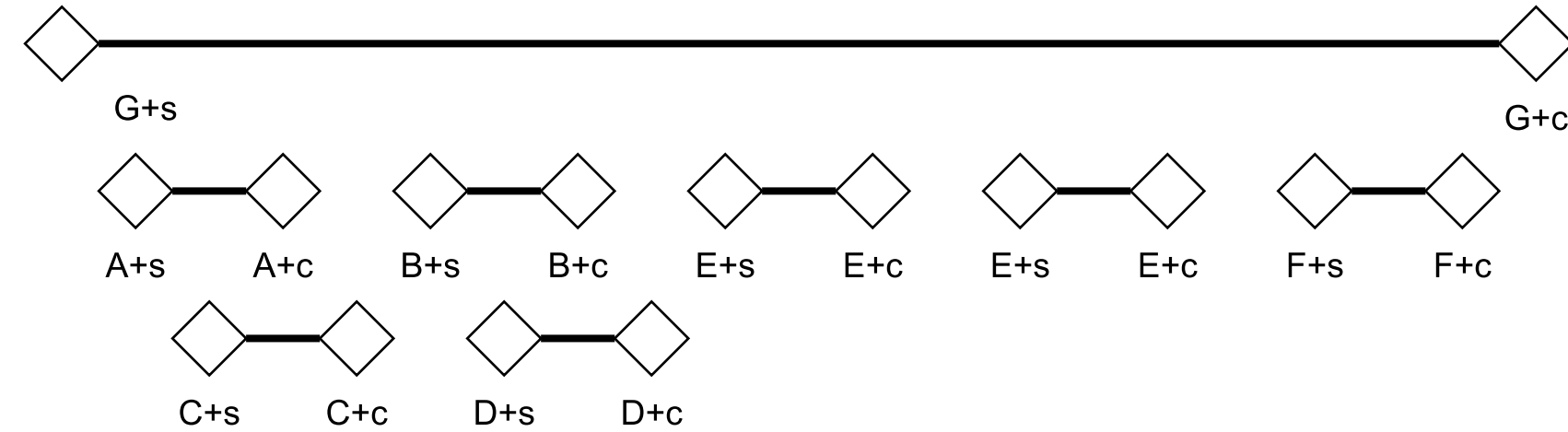


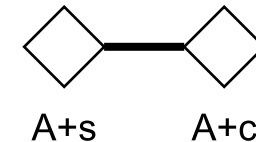
Start: Process Tree + Event Log



Trace 1:

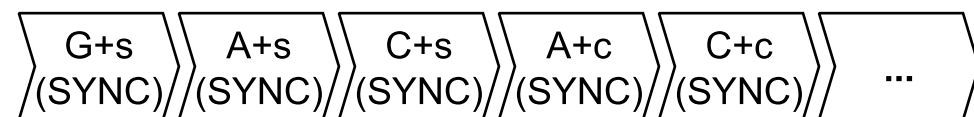


Trace 2:

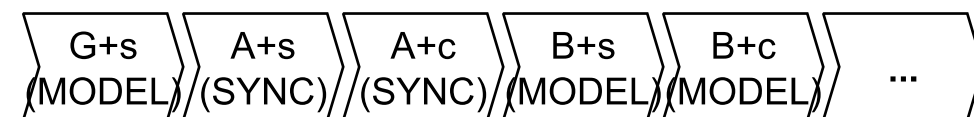


Step 1: Compute Alignments, using Lifecycle Petri net representation

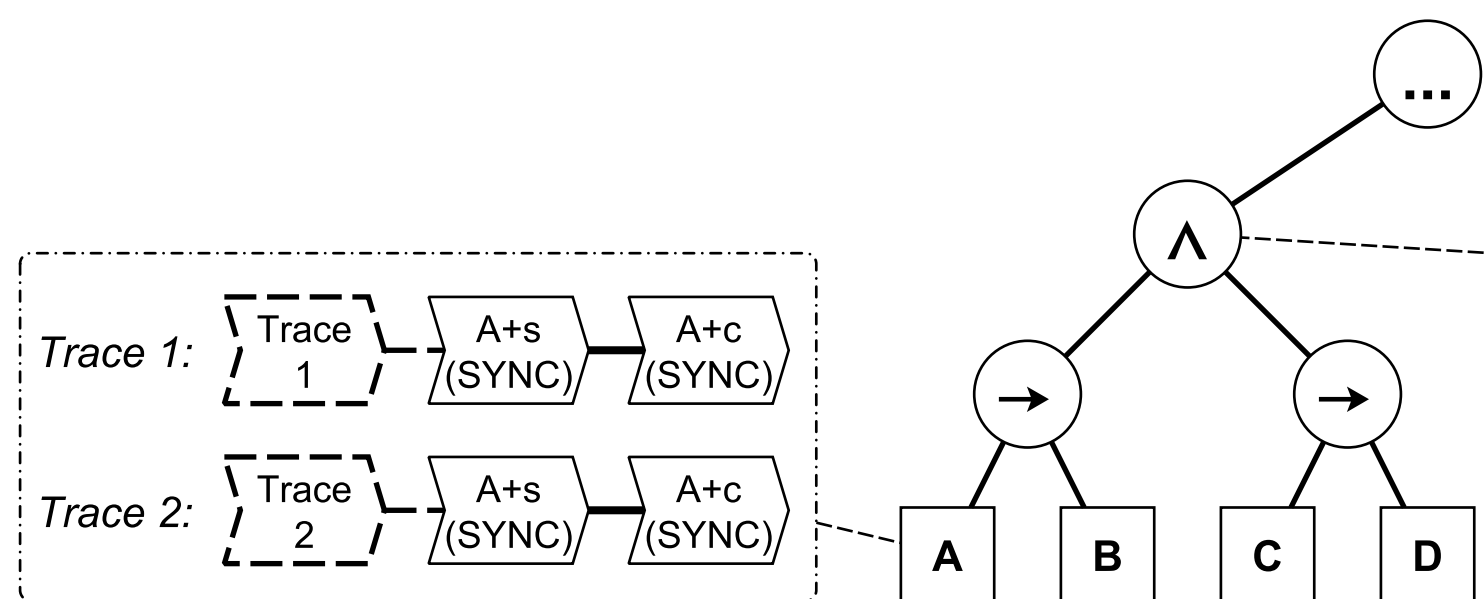
AlignedTrace 1:



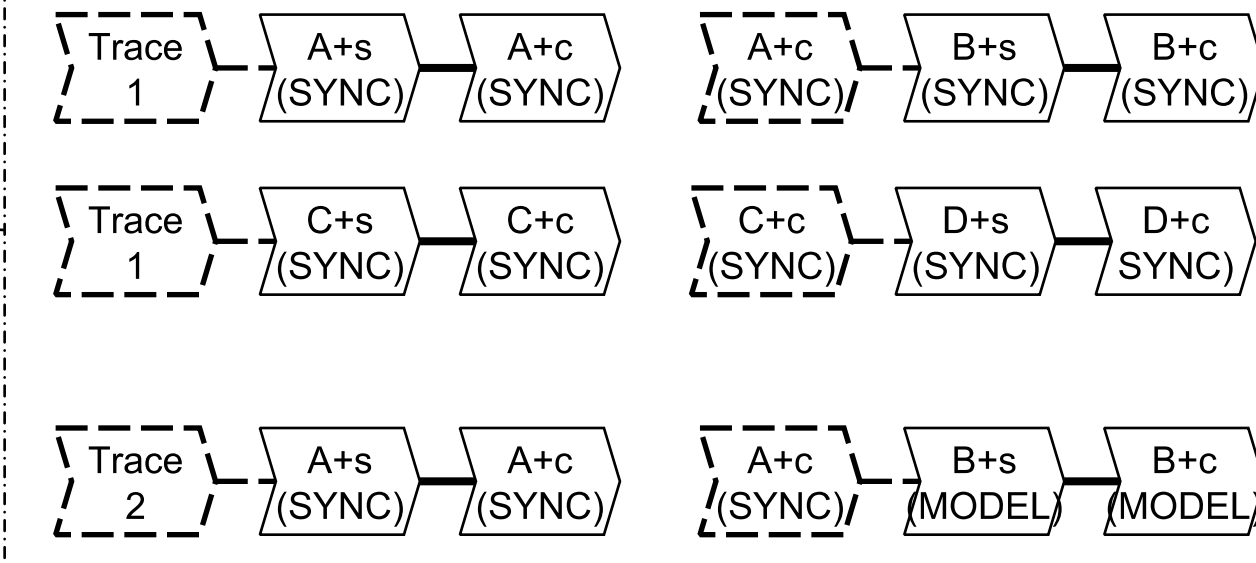
AlignedTrace 2:



*Step 2: Associate intervals with tree nodes,
and compute enabled moves based on Petri net replay semantics*



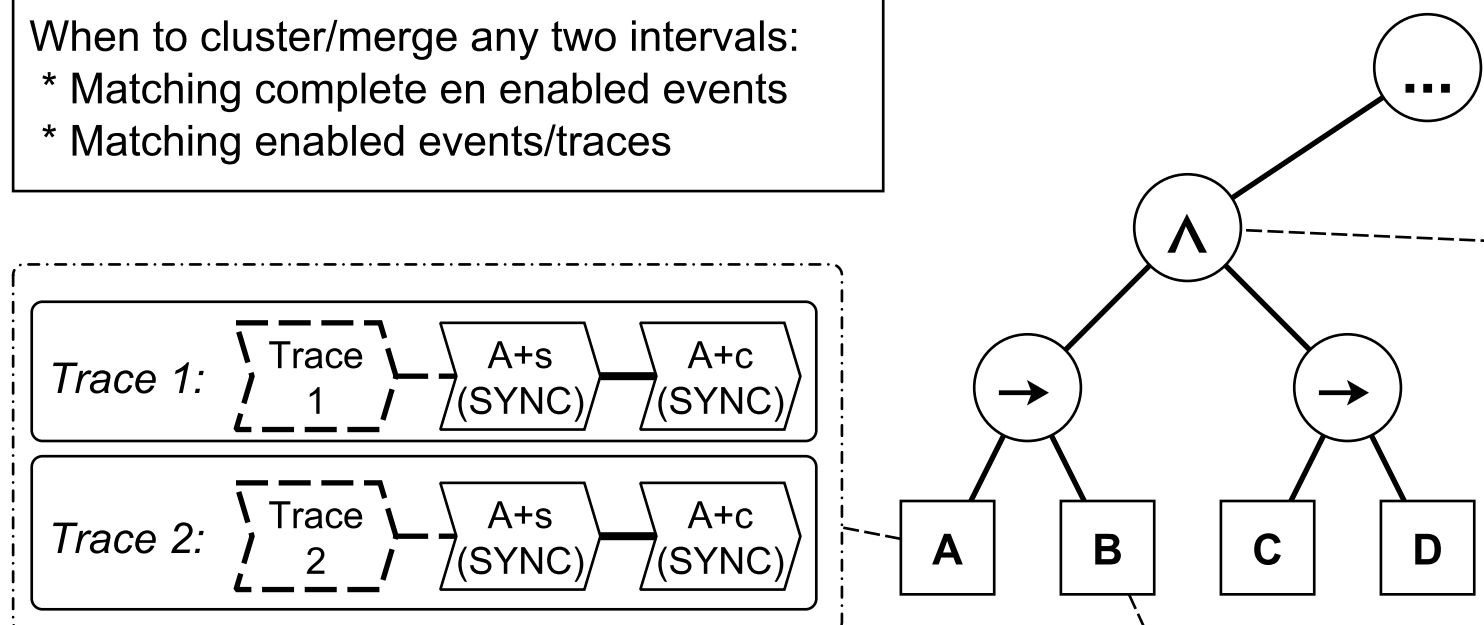
Intervals not associated with node, but obtained from children



Step 3: Compute correlated interval clusters

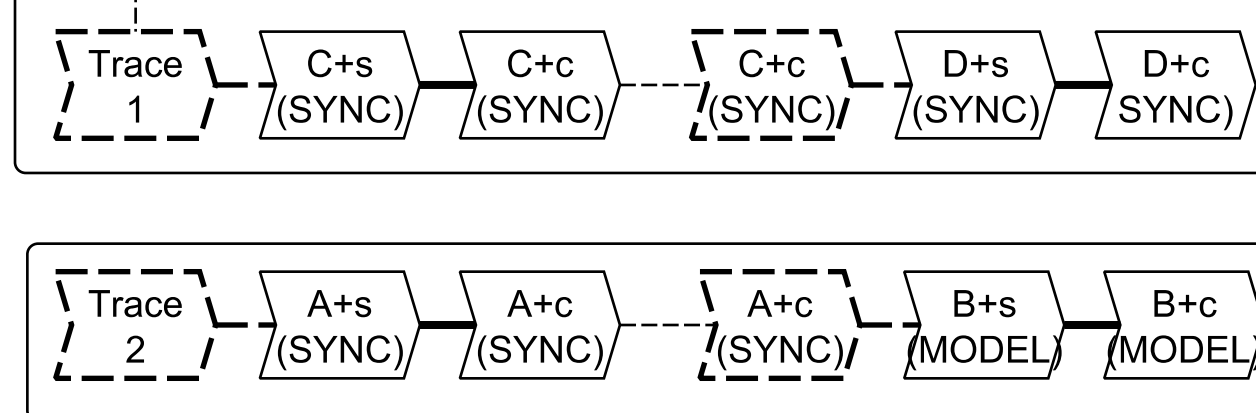
When to cluster/merge any two intervals:

- * Matching complete enabled events
- * Matching enabled events/traces




```

sequenceDiagram
    participant T1 as Trace 1
    T1-->>E1[A+s (SYNC)]
    E1-->>E2[A+c (SYNC)]
    E2-->>D1[ ]
    D1-->>E3[A+c (SYNC)]
    E3-->>E4[B+s (SYNC)]
    E4-->>E5[B+c (SYNC)]
    style T1 stroke-dasharray: 5 5
    style E3 stroke-dasharray: 5 5
    style D1 width:0px, height:0px
  
```



Trace 1: $\boxed{\text{A+c}} \xrightarrow{\text{(SYNC)}} \boxed{\text{B+s}} \xrightarrow{\text{(SYNC)}} \boxed{\text{B+c}}$

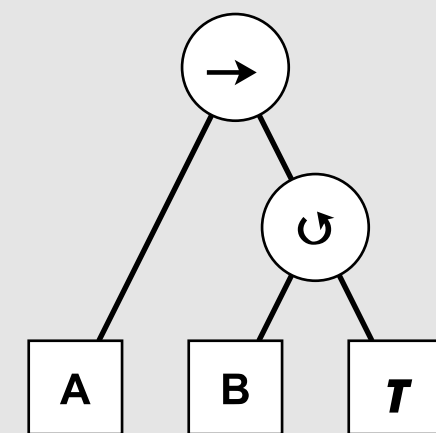
Trace 2: 

Step 4: Compute metrics

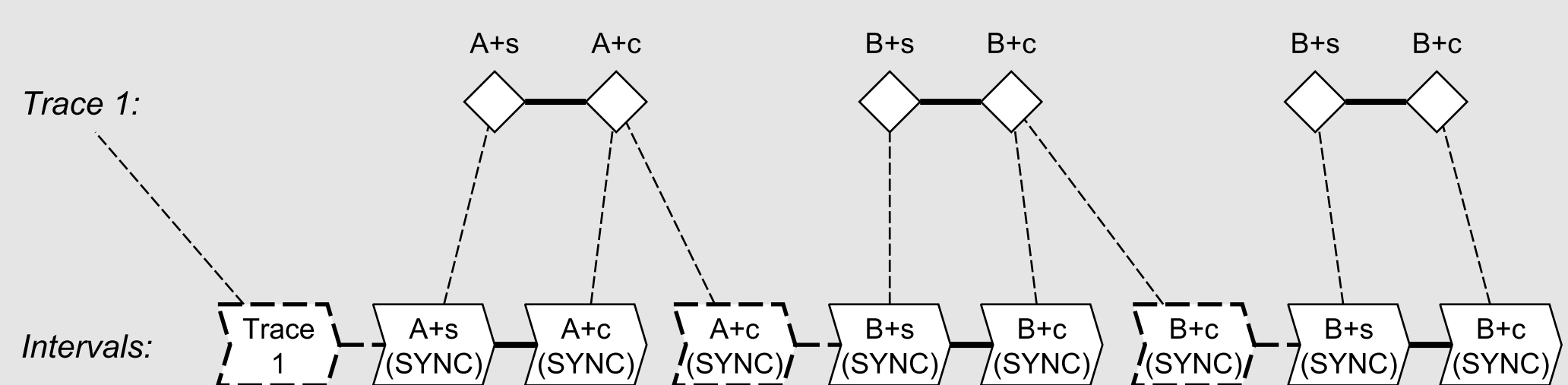
Absolute frequency: 2 (2 interval clusters with SYNC)	Absolute frequency: 1 (1 interval clusters with SYNC)	Absolute frequency: 2 (2 interval clusters with SYNC)
Case frequency: 2 (2 trace identifiers with SYNC)	Case frequency: 1 (1 trace identifiers with SYNC)	Case frequency: 2 (2 trace identifiers amongst children)
Model moves: 0 (0 interval clusters with MODEL)	Model moves: 1 (1 interval cluster with MODEL)	Model moves: 1 (1 interval cluster with MODEL) <?>
Duration: take smallest containing interval for each cluster	Duration: take smallest containing interval for each cluster	Duration: take smallest containing interval for each cluster

Process Tree

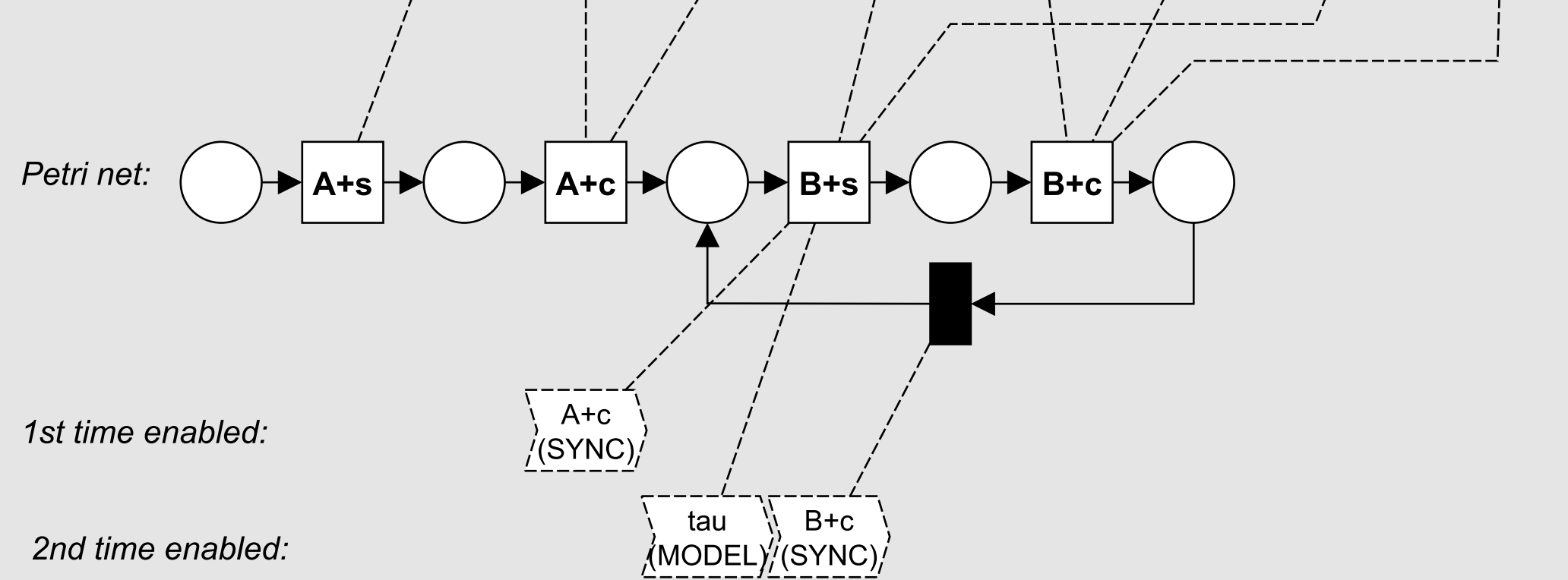
Alignment:



Trace 1:



Intervals:

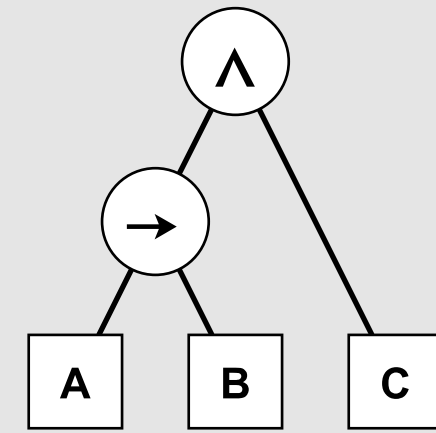


1st time enabled:

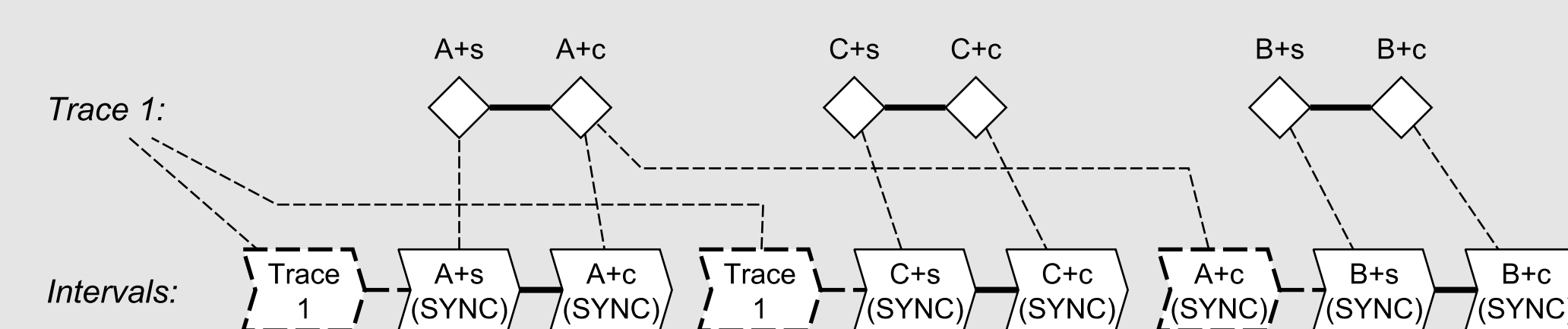
2nd time enabled:

Process Tree

Alignment:

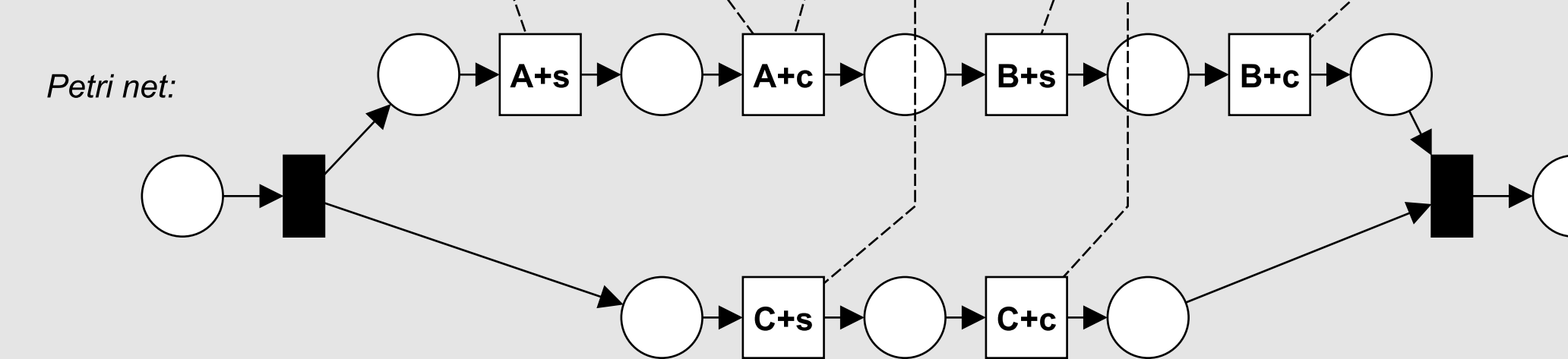


Trace 1



Intervals

Petri net:



*Problem: How to form clusters
with (short) loops?*

