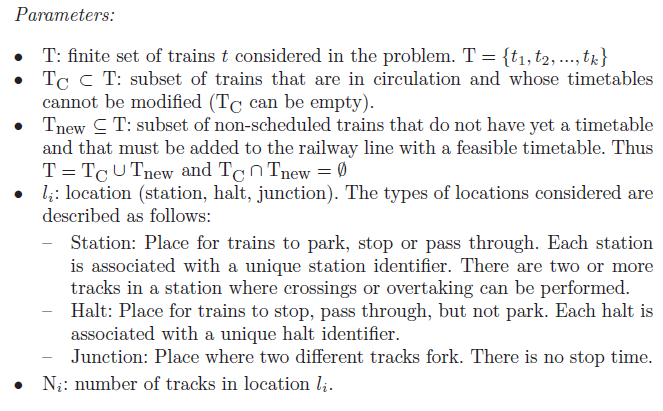
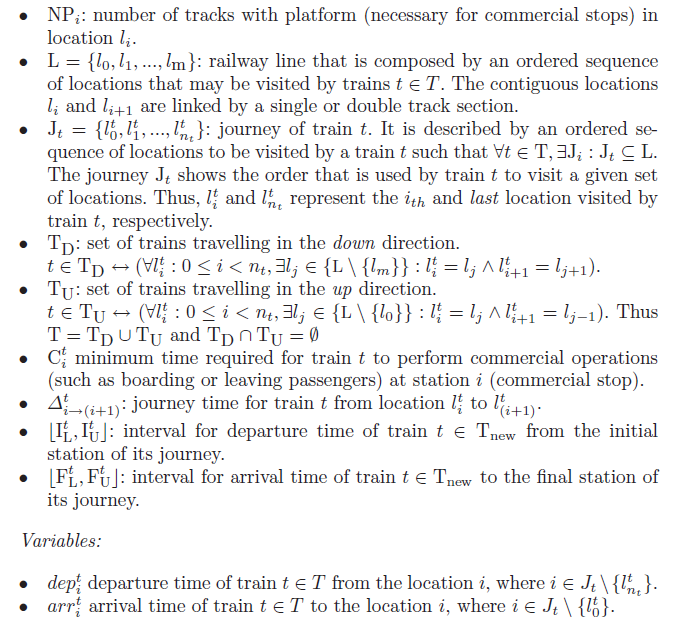
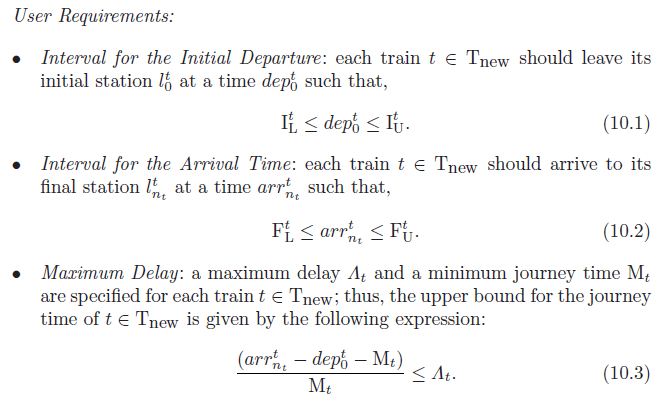
**Model**

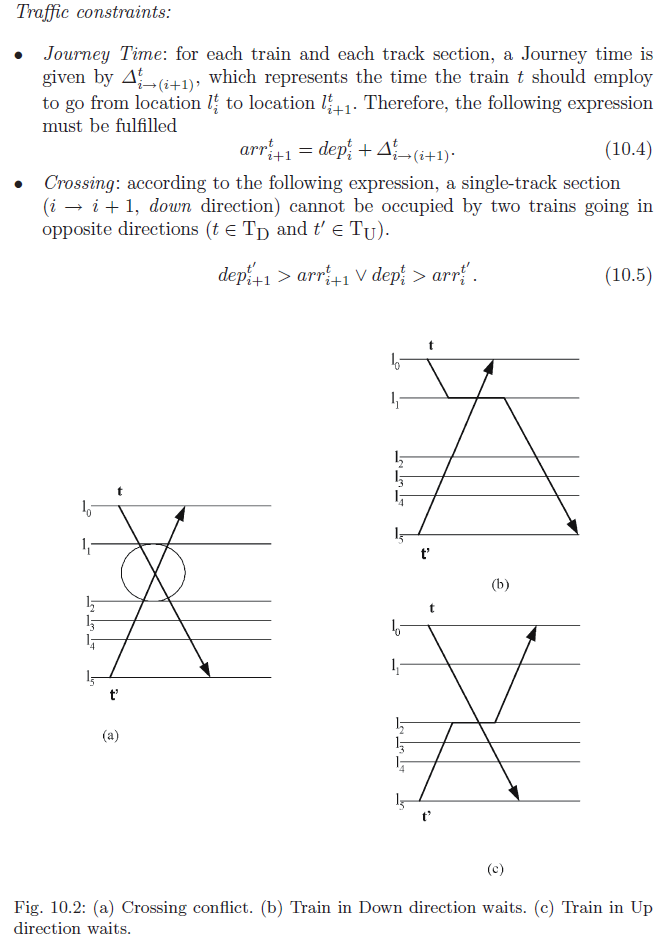
**Notation**

****

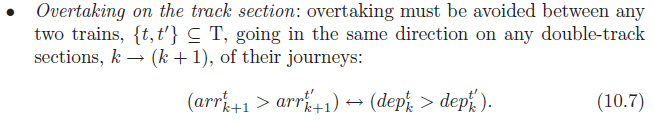
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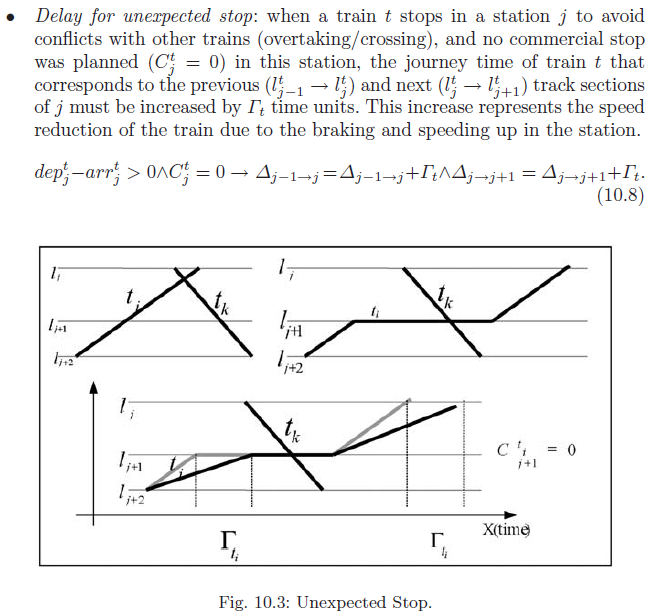
**Constraints**

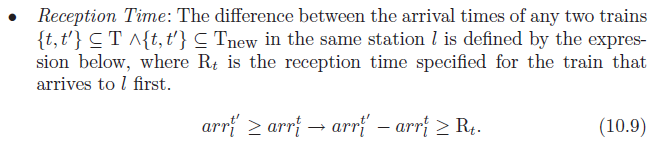




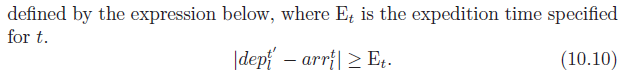


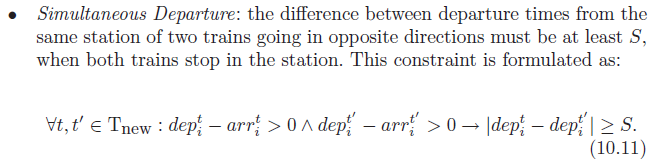


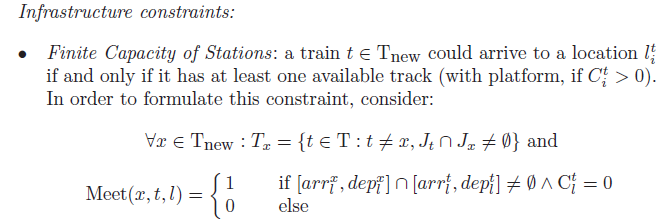
Think we can ignore this one but not sure if this makes the problem harder or easier. If harder = remove

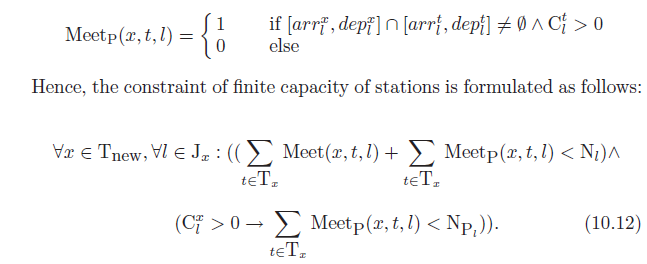


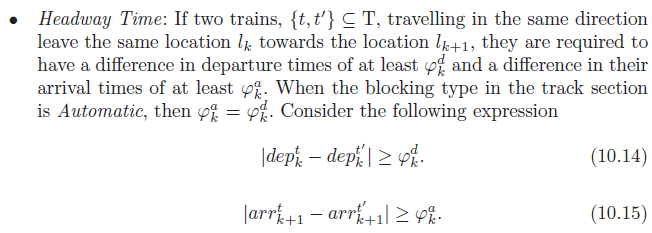










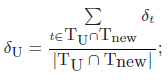


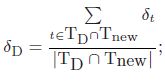
**Optimization Problem**



Average delay of new trains with respect to their optimum 



 -> Average for trains going in the up direction which is the sum of the average delay for each new train going in the up direction over how many new trains are going in the up direction



 -> Total

 -> To optimize = minimum delay for all trains