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Time Patterns Relation in

Assisted Automated Scheduling

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Program

1. Introduction

2. Timetable

3. Time patterns

4. Patterns relation

5. Summary

6. Further research

1. Introduction (1)

First timetables:

1903 – Karol Adamecki

Graphical method of

analysis and planning
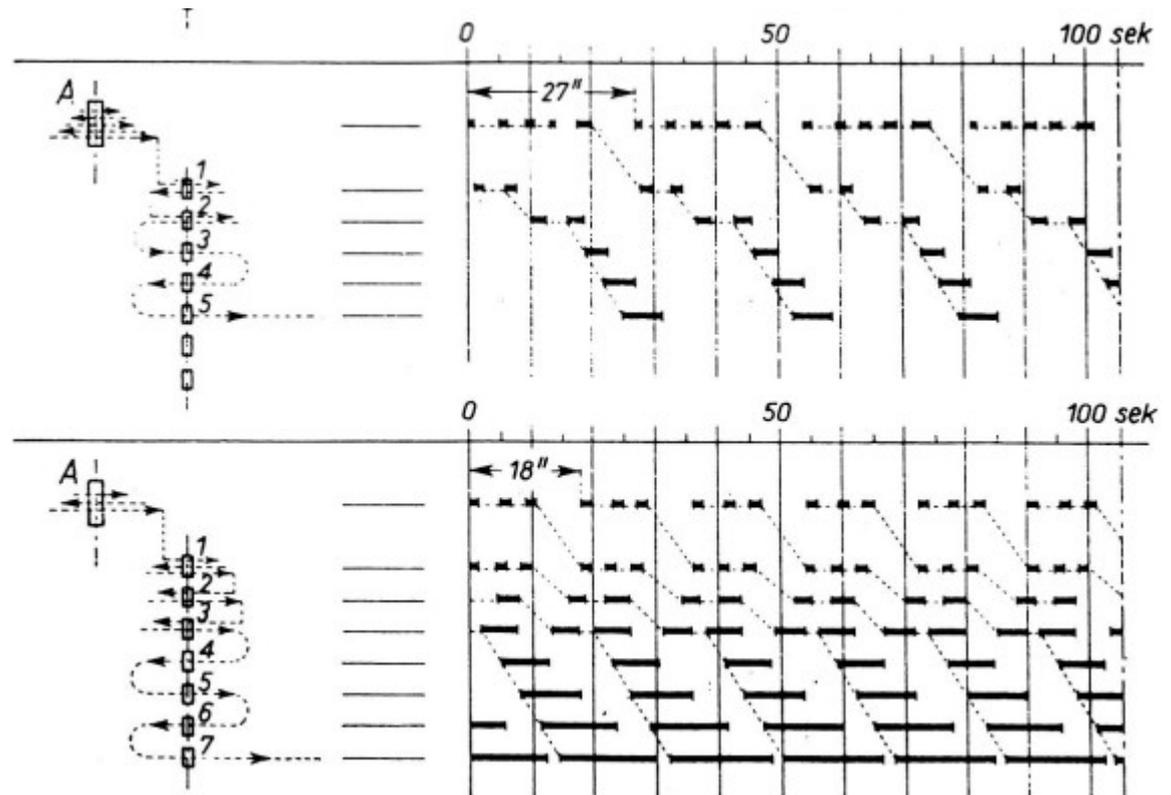
1. Introduction (2)

First timetables:

1917 – L. H. Gantt

Graphical method of

planning and control

1. Introduction (3)

Examples of timetables:

- School timetable

- Delivery schedule

- Railway guide

- Project schedule

- Production schedule
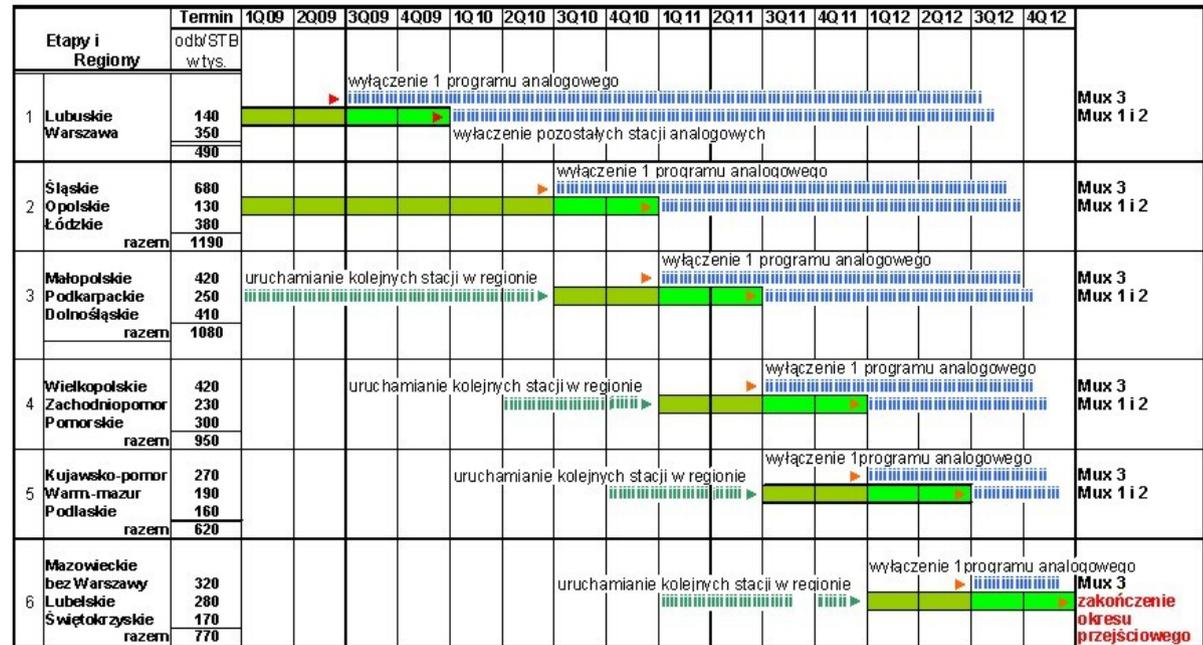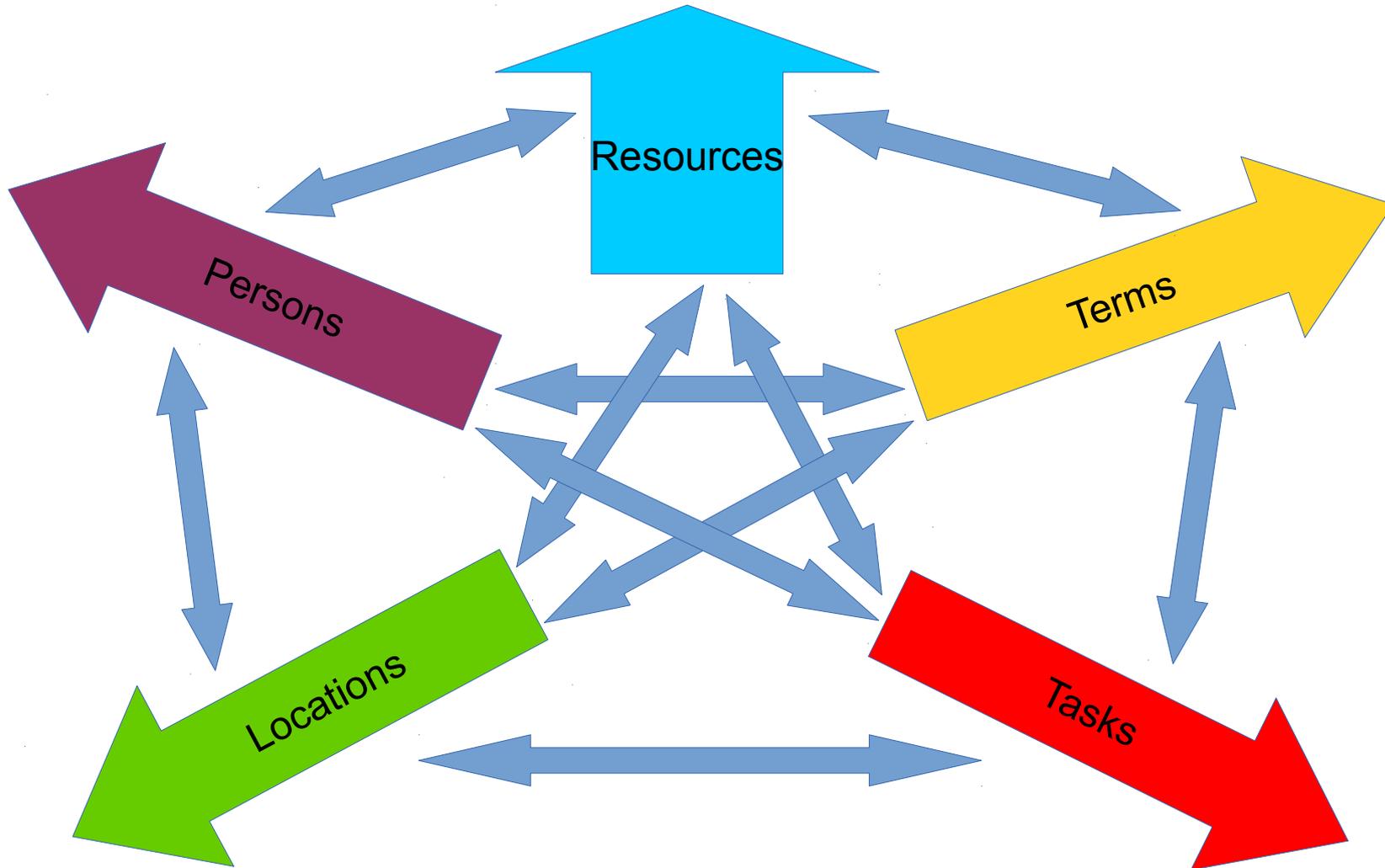
2. Timetable (1)

2. Timetable (2)
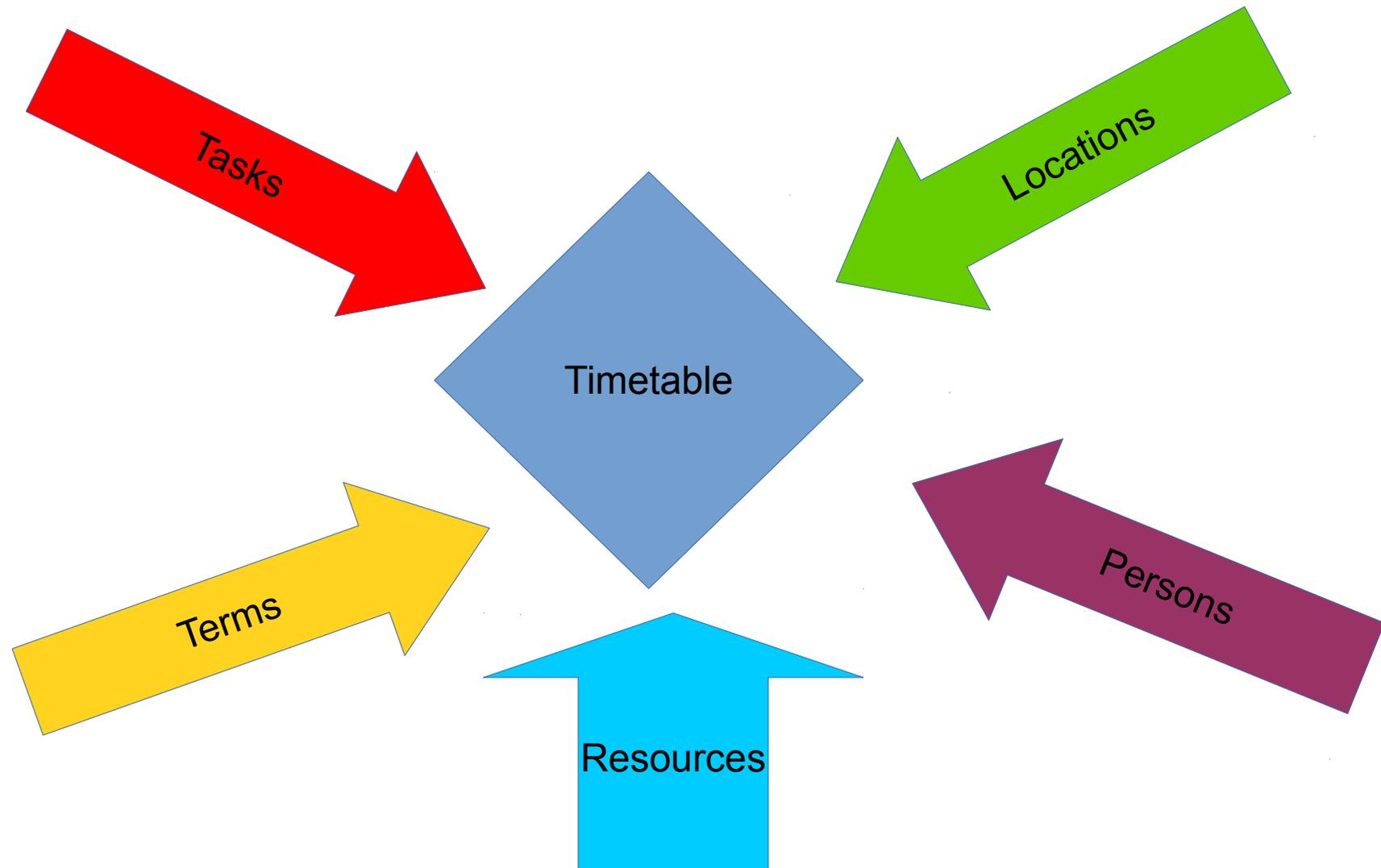
2. Timetable (3)
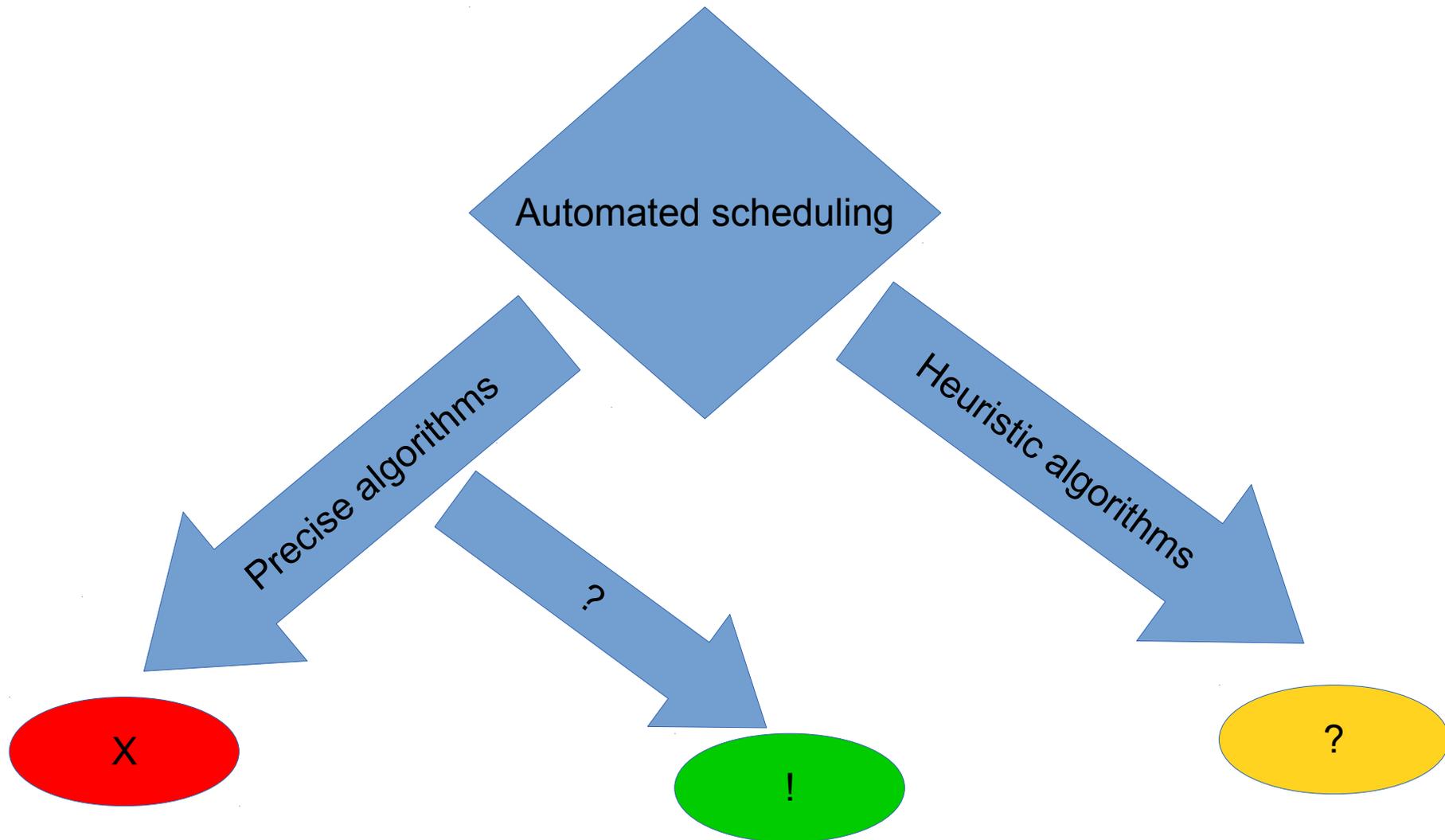
3. Time patterns (1)
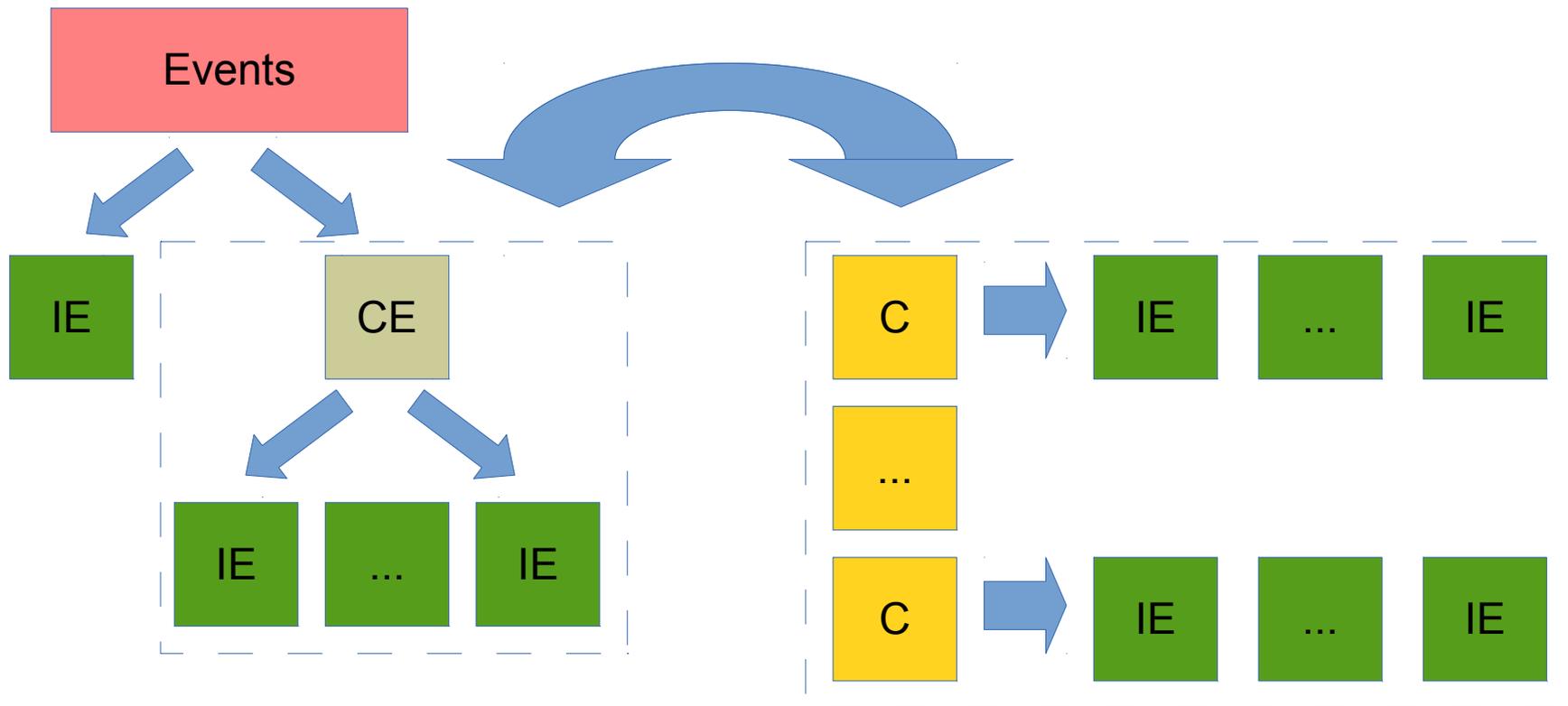
3. Time patterns (2)

Sum of all events in modeled system with cyclic events:

$$SE = \sum_{i}^{I} \sum_{j}^{Ji} \sum_{k}^{Kj} \left(IE_{x,k} + EI_{x,k} \right)$$

where:

SE – sum of all events in modeled system,

I – number of different Individual Events IE,

Ji – number of cycles in a cyclic event i,

Kj – number of Individual Events IE in a cycle j,

$IE_{x,k}$ – Individual Event of type x in a cycle j,

$IE_{x,k}$ – Event Interval for Individual Event of type x in a cycle j.

4. Patterns relation (1)
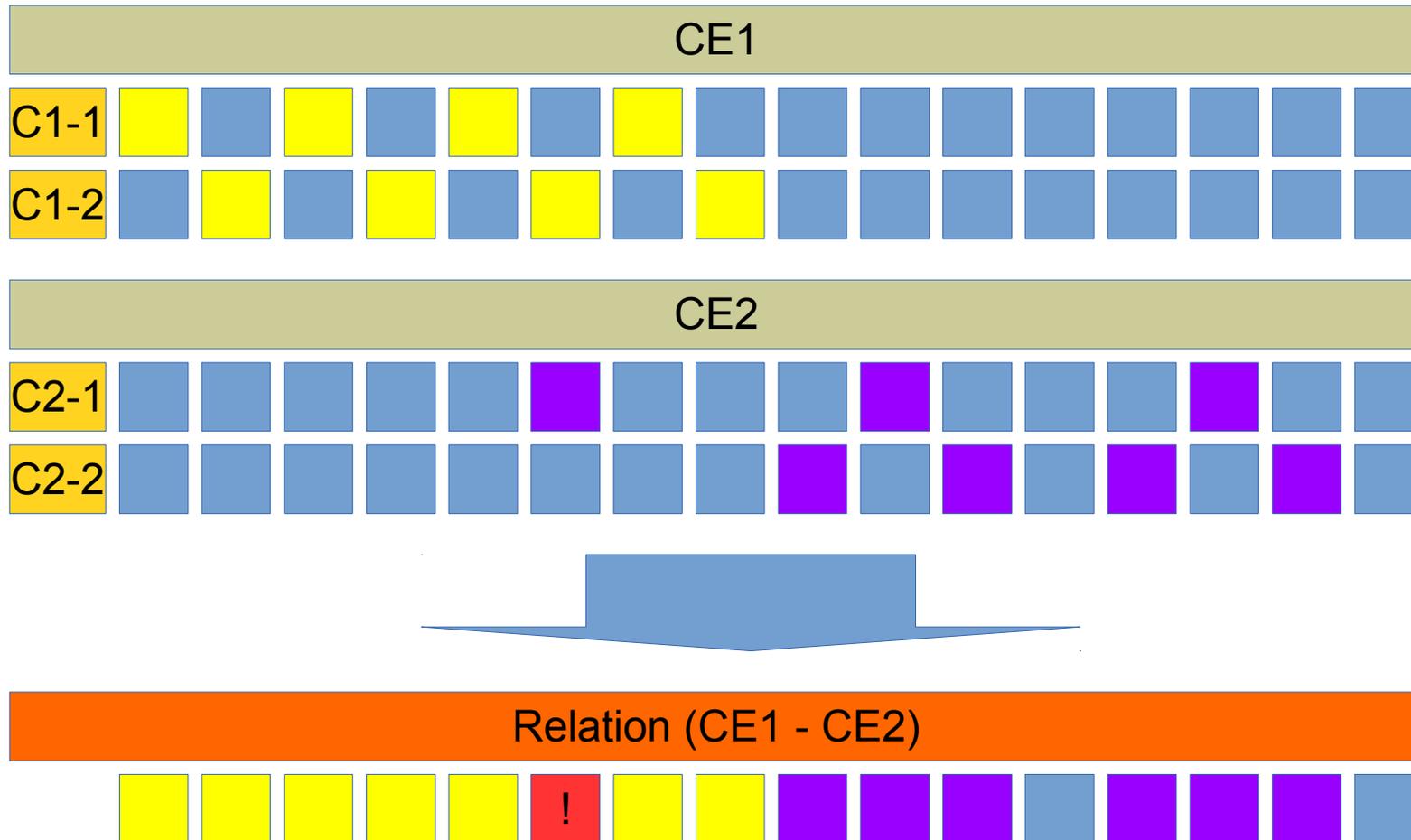
4. Patterns relation (2)
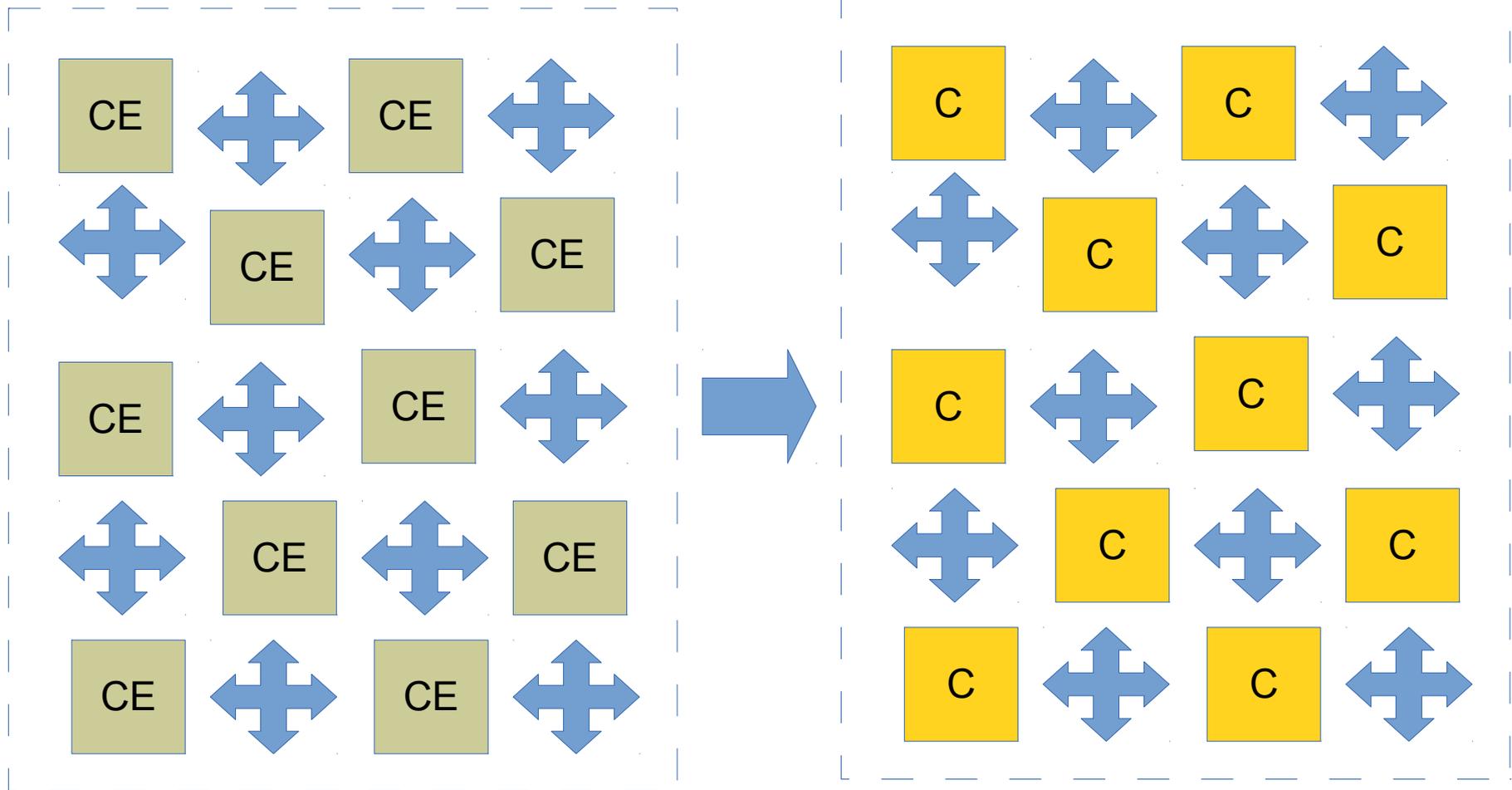
5. Summary (1)

- Real life timetable depens
  on cyclic events

- Cyclic events are based
  on time patterns

- Time patterns relations
  determine the correctness
  of the timetable

5. Summary (2)

- Computational cost
  of timetable creation
  depends on complexity
 of system model

- Current methods suports
  only simplified models

- Full time patterns processing
  based on current models
  is unprofitable

Summary
we are almost
there

6. Further research

- Usage of existing methods of time patterns description for creation of efficient time dimension of system model

- Transformation of formal described models into flexible structure adaptable for the variety of heuristic algorithms

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Thank you for your attention