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SEAM: An Optimal Message Synchronizer in ROS with Well-Bounded Time Disparity

Jinghao Sun[1], Tianyi Wang[1], Yang Li[1], Nan Guan [2,*], Zhishan Guo[3], Guozhen Tan[1]
1. Dalian University of Technology, Dalian, China
2. City University of Hong Kong, Hong Kong, China
3. North Carolina State University, United States

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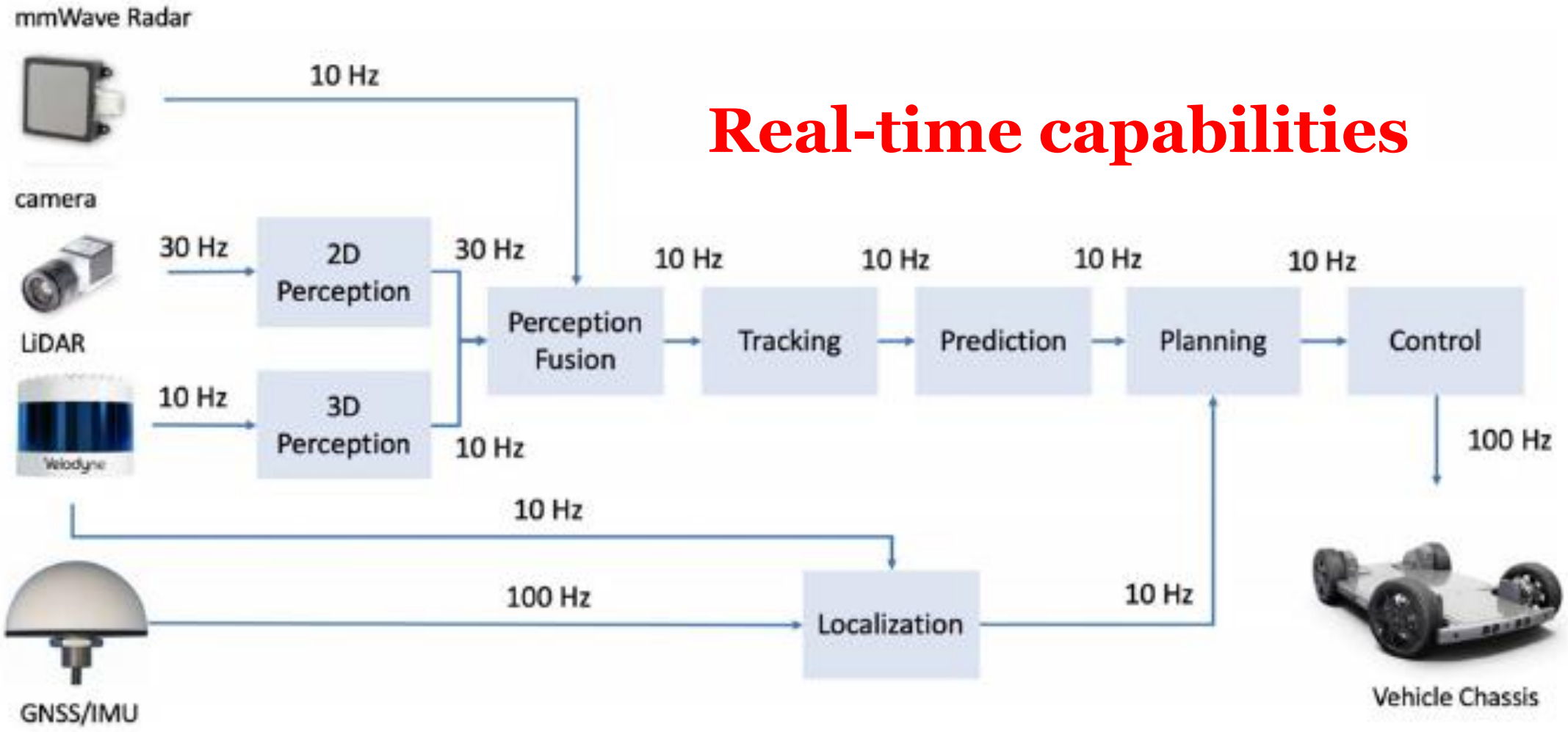
Contents

- background
- ros message sync and filter
  - exect policy
  - approximate policy
- seam policy

Background



Real-time capabilities

ROS Message Synchronization

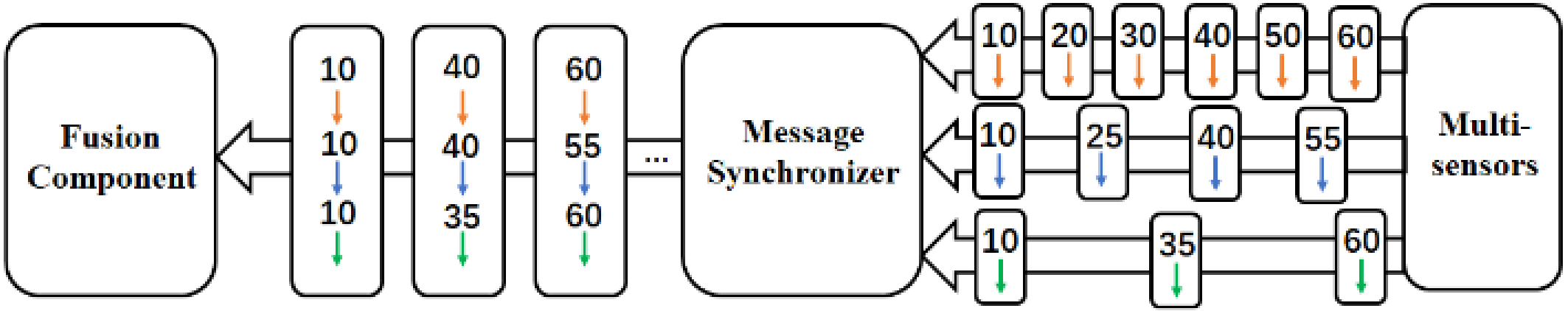


Fig. 2. The overview of Message Synchronizer.

The *ExactTime* policy

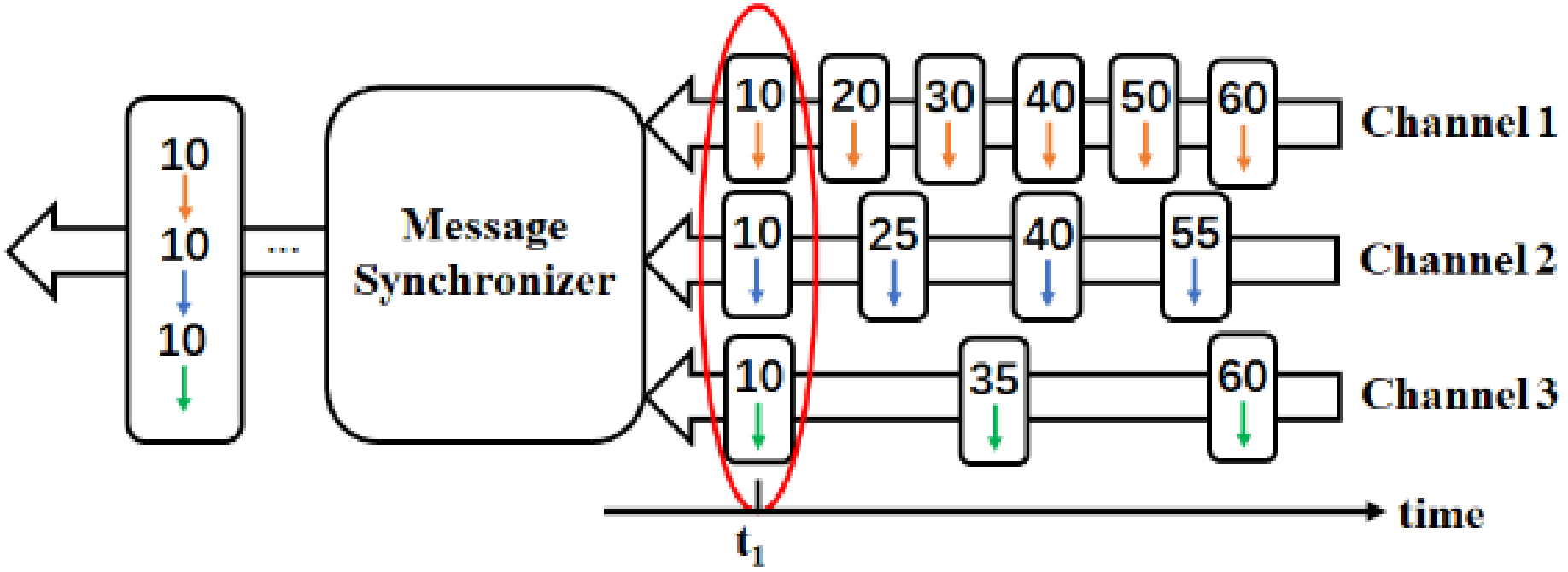


Fig. 3. An example to illustrate the *ExactTime* policy.

The *ApproximateTime* policy

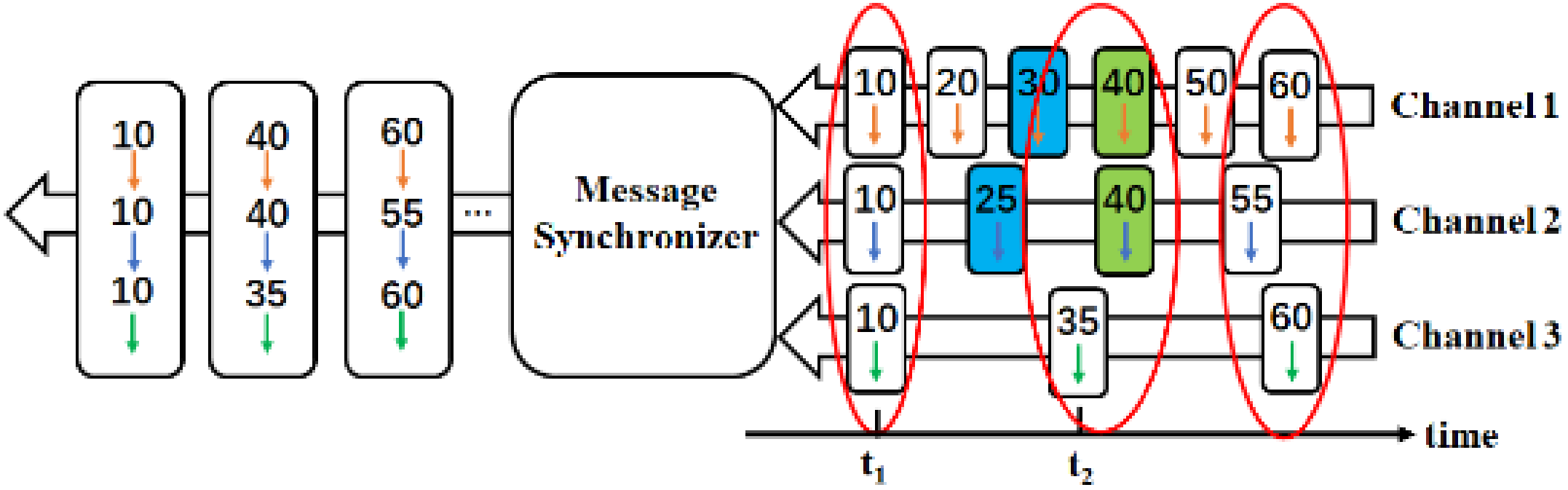


Fig. 4. An example to illustrate the *ApproximateTime* policy.

the *approximatetime* is not optimal

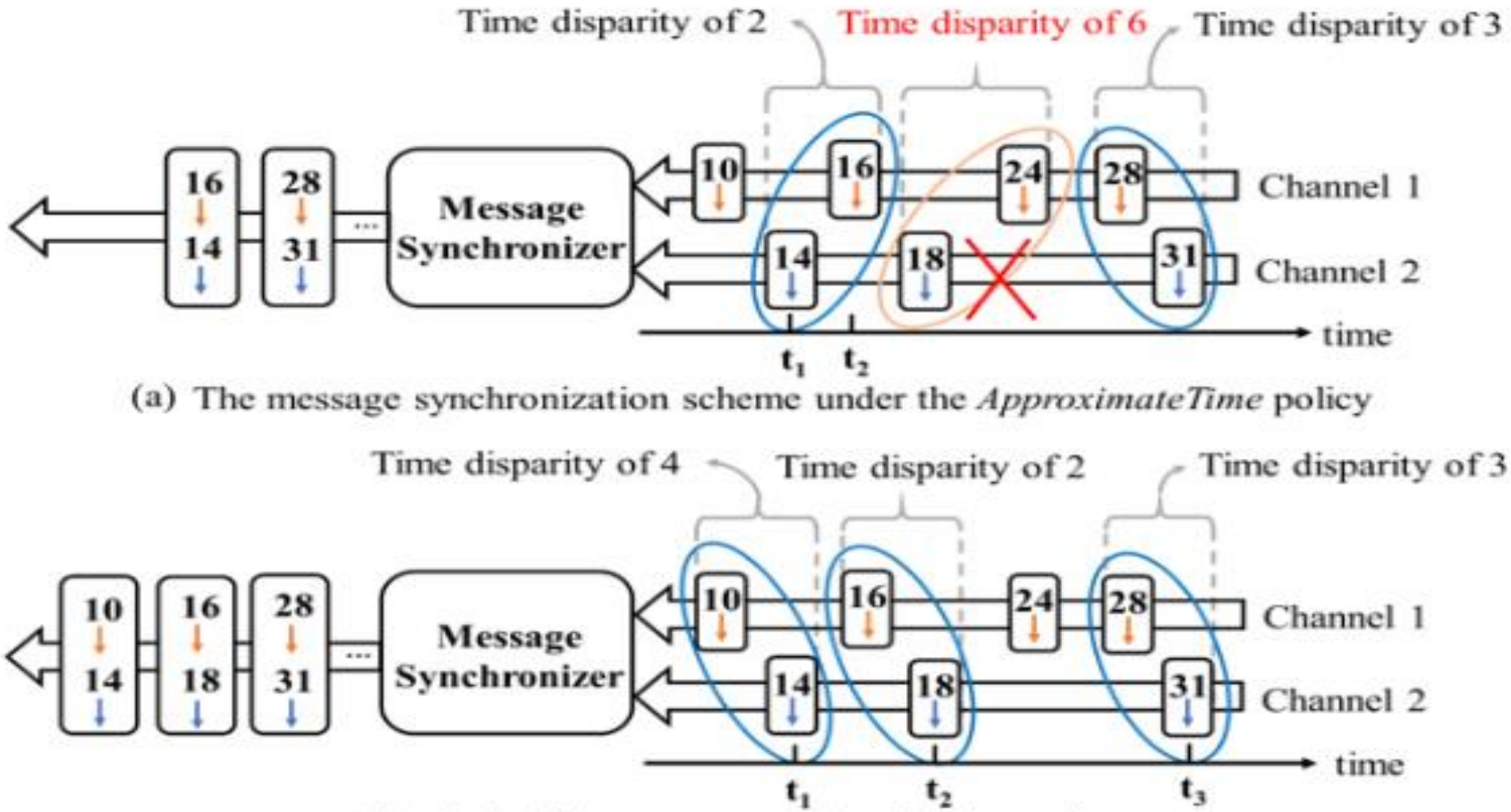


Fig. 5. An example shows that the *ApproximateTime* is not optimal.

execttime policy	so exact and lost some messages
approximate policy	predict and wait for future

threshold=35

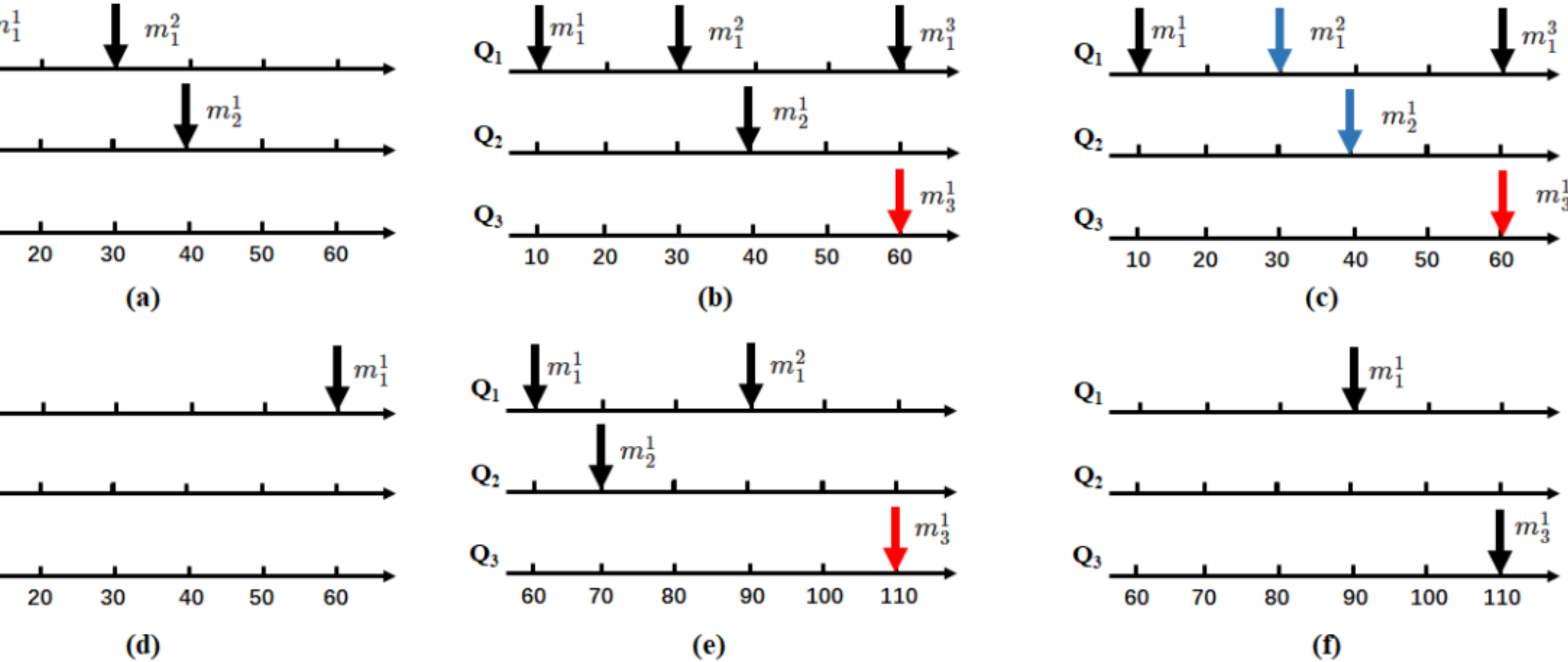


Fig. 7. An example illustrating the SEAM algorithm.