Demystifying asynchronous communication and its variants*

Subtitle†

ANONYMOUS AUTHOR(S)

Text of abstract ....

Additional Key Words and Phrases: keyword1, keyword2, keyword3

1 INTRODUCTION

- Interleaving based semantics VS partial order/graph based semantics
- Synchronous and asynchronous communication
- The problem of synchronizability

2 PRELIMINARIES/BASICS

- Communicating systems (communicating finite-state automata with bag channels)
- MSCs and conflict graph
- Monadic Second-Order logic on MSCs
- (Language of a system as a set of MSCs)
- (Model checking and synchronizability)

3 ASYNCHRONOUS COMMUNICATION MODELS OVERVIEW

- Overview of asynchronous variants
- High-level description of each variant along with references to implementations (if existing)
- (Language of a system with a given communication model as a set of MSCs)

4 ASYNCHRONOUS COMMUNICATION MODELS OPERATIONAL SEMANTICS

- TODO...

5 ASYNCHRONOUS COMMUNICATION MODELS AS CLASSES OF MSCS, MSO-DEFINABILITY

- Definition of MSC class for each communication model
- MSO-definability of each class

6 EQUIVALENCE OF THE TWO DEFINITIONS

- TODO...

7 HIERARCHY OF ASYNCHRONOUS CLASSES OF MSCS

...

8 AN APPLICATION: SPECIAL TREEWIDTH AND DECIDABILITY OF THE SYNCHRONIZABILITY PROBLEM

- The synchronizability problem

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- Special treewidth and how the results regarding the hierarchy are useful for detecting STW-boundness of certain classes
- MSO-decidability and STW-boundess tables

9 CONCLUSION

A APPENDIX

Text of appendix ...