Research Institute for Discrete Mathematics Chip Design Summer Term 2014

Prof. Dr. S. Hougardy R. Scheifele, M. Sc.

Exercise Set 7

Exercise 7.1: Consider the following problem:

Input: An instance of the STANDARD PLACEMENT PROBLEM without blockages where all circuits have unit width and unit height and all net weights are equal to 1.

Task: Find a feasible placement of minimum bounding box net length.

Prove or disprove: The above problem is NP-hard.

(4 points)

Exercise 7.2:

Prove: The STANDARD PLACEMENT PROBLEM with only one circuit can be solved optimally in polynomial time.

(4 points)

Deadline: Tuesday, May 27, before the lecture.

The websites for lecture and exercises are linked at

http://www.or.uni-bonn.de/lectures/ss14/ss14.html

In case of any questions feel free to contact me at scheifele@or.uni-bonn.de .