

# Mathematics of Infrastructure Planning

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## Exercise sheet 6

Deadline: Thu, May 24, 2012, **23:59**, <mailto:borndoerfer@zib.de>

### Exercise 18.

**5+5 points**

Use ZIMPL to model the mobile phone network coverage problem of exercise 10. Test data for six instances is provided in files `Tiny.dat`, `K.dat`, and `siemens[1-4].dat`. The model file `fap-skeleton.zpl` will give you a start. All files are posted on the webpage. Consider the cases

- a) ignoring forbidden technologies
- b) including forbidden technologies.

Use SCIP to compute best possible solution using your ZIMPL model. Compile the optimal objective values in a table. Send your ZIMPL file and your result table to [borndoerfer@zib.de](mailto:borndoerfer@zib.de) by the deadline.

### Exercise 19.

**5+5 points**

Extend your ZIMPL model to also deal with neighbor interference as described in exercise 12. Consider again the cases

- a) ignoring forbidden technologies
- b) including forbidden technologies.

Use SCIP to compute best possible solution using your ZIMPL model. Compile the optimal objective values in a table. Send your ZIMPL file and your result table to [borndoerfer@zib.de](mailto:borndoerfer@zib.de) by the deadline.