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**PRISON GUARDS DILEMMA: OPTIMAL INMATE
ASSIGNMENT BY MULTIOBJECTIVE MIXED INTEGER
LINEAR OPTIMIZATION**

The Pennsylvania Department of Correction operates 25 correctional facilities (prisons) and has about 50,000 prisoners (inmates) each year. The assignments of inmates to appropriate correctional facilities is a complex task. Well over 70 rules need to be considered. Many of them, such as the security of prison units, yield hard constraints; while others, such as assigning the inmates to prisons close to their home, are arranged in a preference hierarchy because it is impossible to satisfy all constraints for all inmates. Further, inmates have to go through treatment and educational programs. We are giving an overview of the complexity of the problem; discuss the data/rule collection phase of the project by using decision trees; discuss how the MILO model is developed by using a weighted penalty objective function. Finally we discuss the benefit and impact of the developed Inmate Assignment Decision Support System (IADSS).

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