

# Loose Model Coupling by Iteratively Propulsed Simulations for a Model Pipeline

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In the context of the cooperation project “Efficient Airport 2030” the classical task arises to realize a model coupling between some complex and methodological different models with the final intention to be able to answer the questions originating in the over-all method of a scenario analysis. Each phase from the home of the passengers to the take-off of the aircraft is modeled by a separate sub-model, each with its own modeling paradigm. In regard to the relatively loose interconnection between these models and the forward-oriented pipelining character of the data flow there is no need for a close coupling especially with respect to the limited demands of the intended model interpretation given by fixed scenarios. A common time handling for the submodels can be neglected, therefore. Nevertheless, a basic feedback mechanism in the model pipeline is necessary, which is implemented by the approach of iteratively propulsed simulation. This approach results in a significant increase of simulation runtime but it has the advantage to leave the coupled submodels completely unchanged as independent black-boxes that need not be extended for additional communication.