Support for parameter study applications in the P-GRADE Portal

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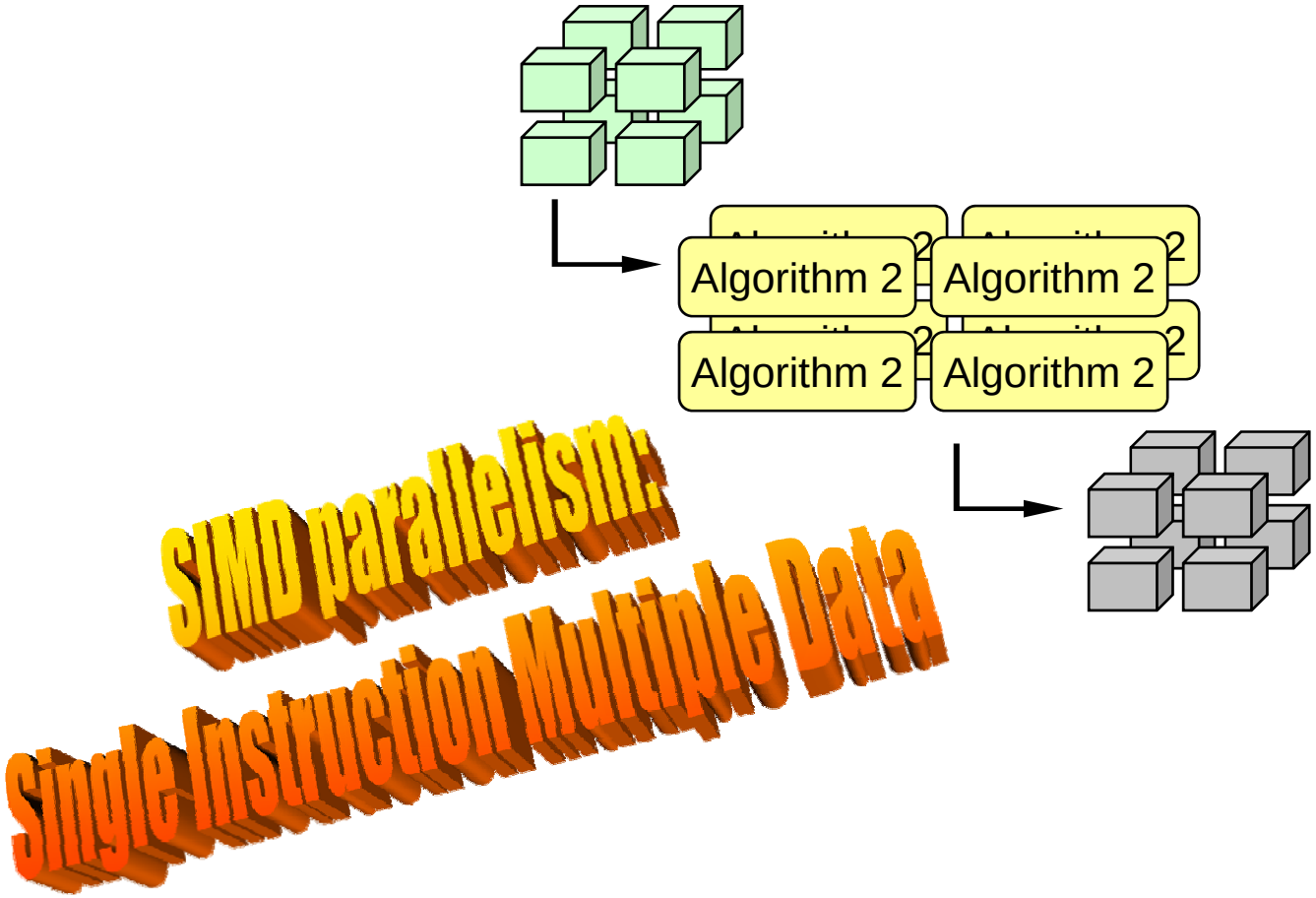
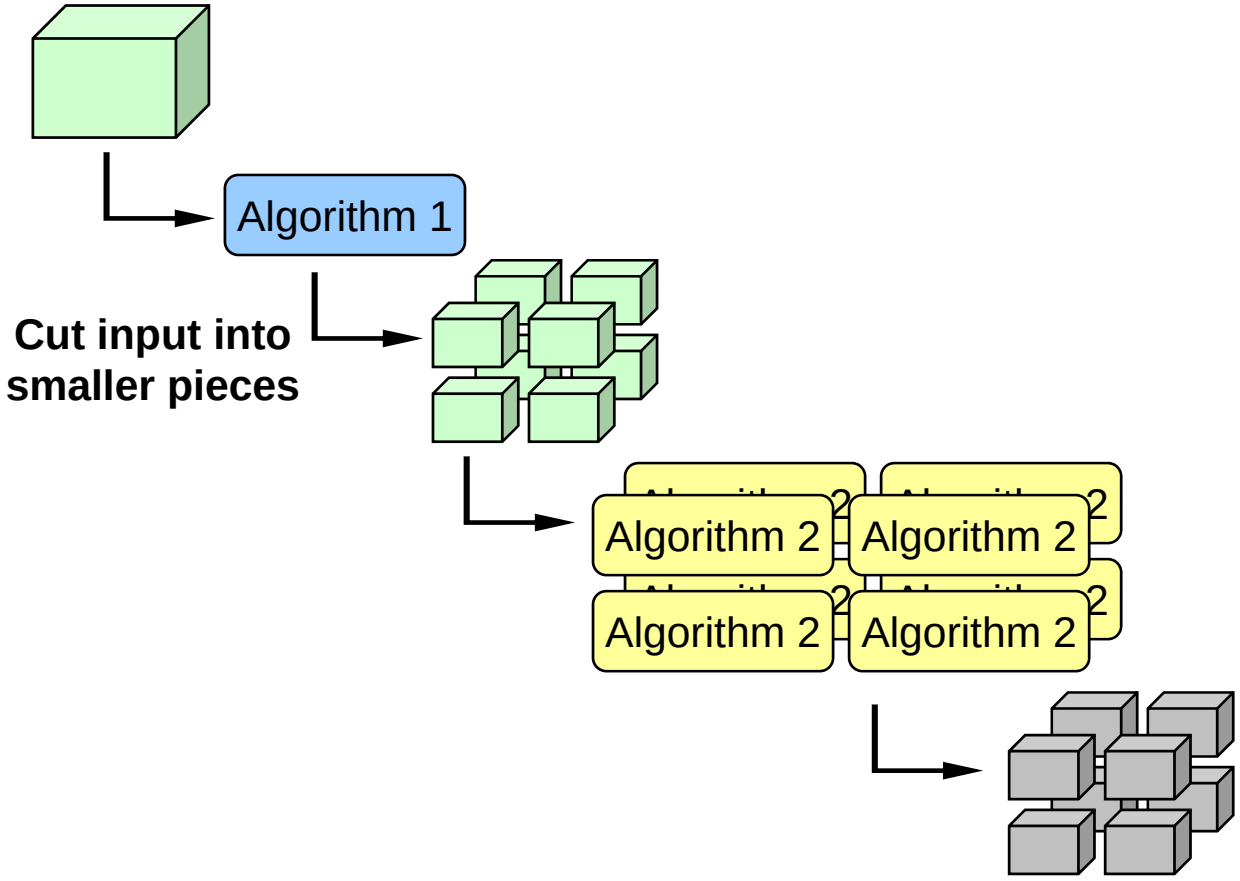
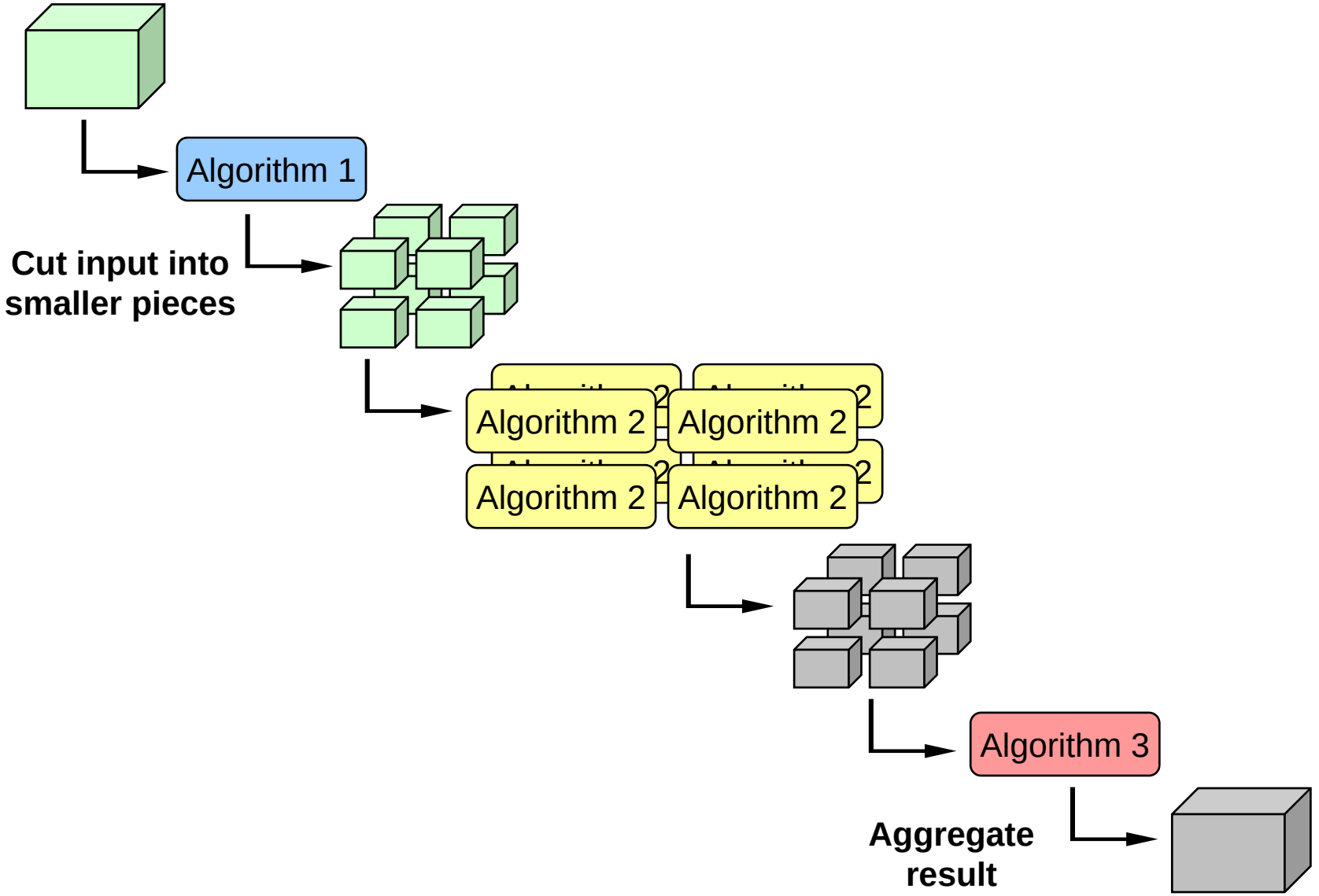
General structure of a PS applications



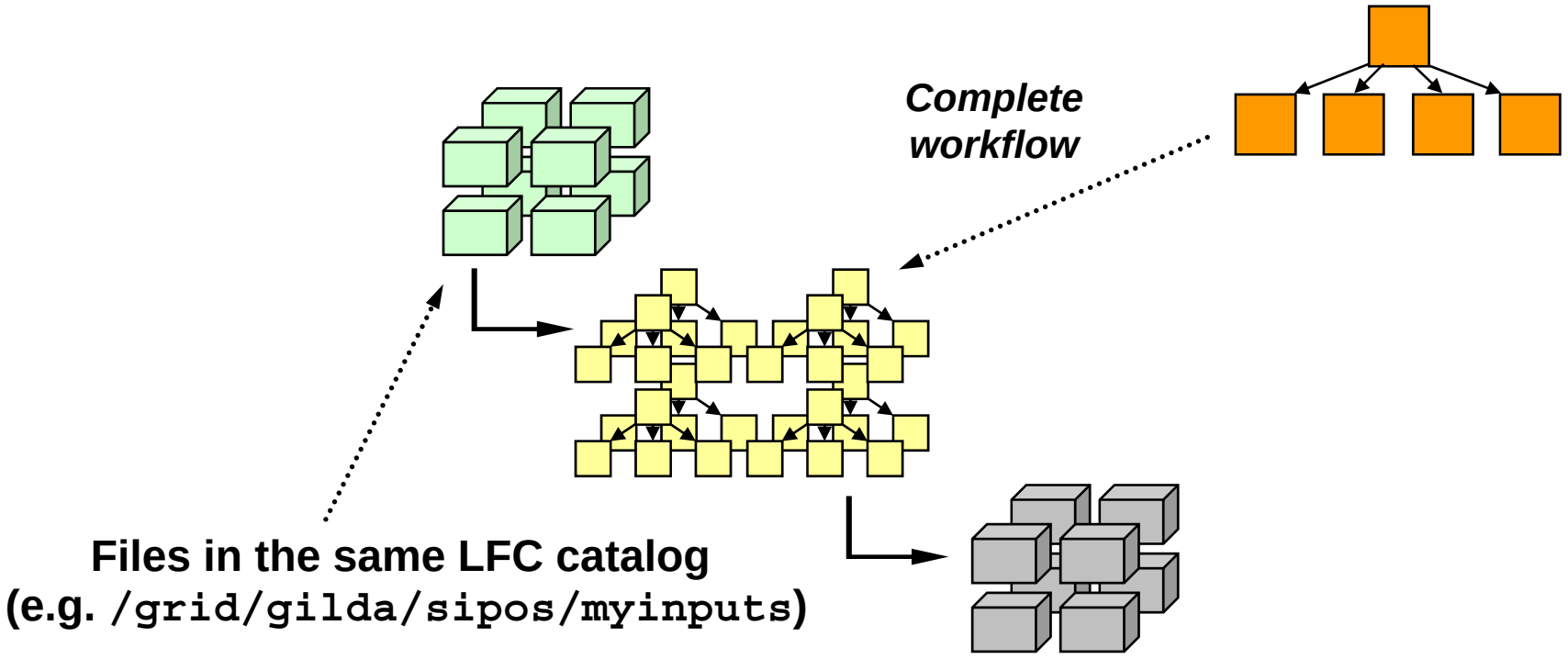
Advanced PS applications



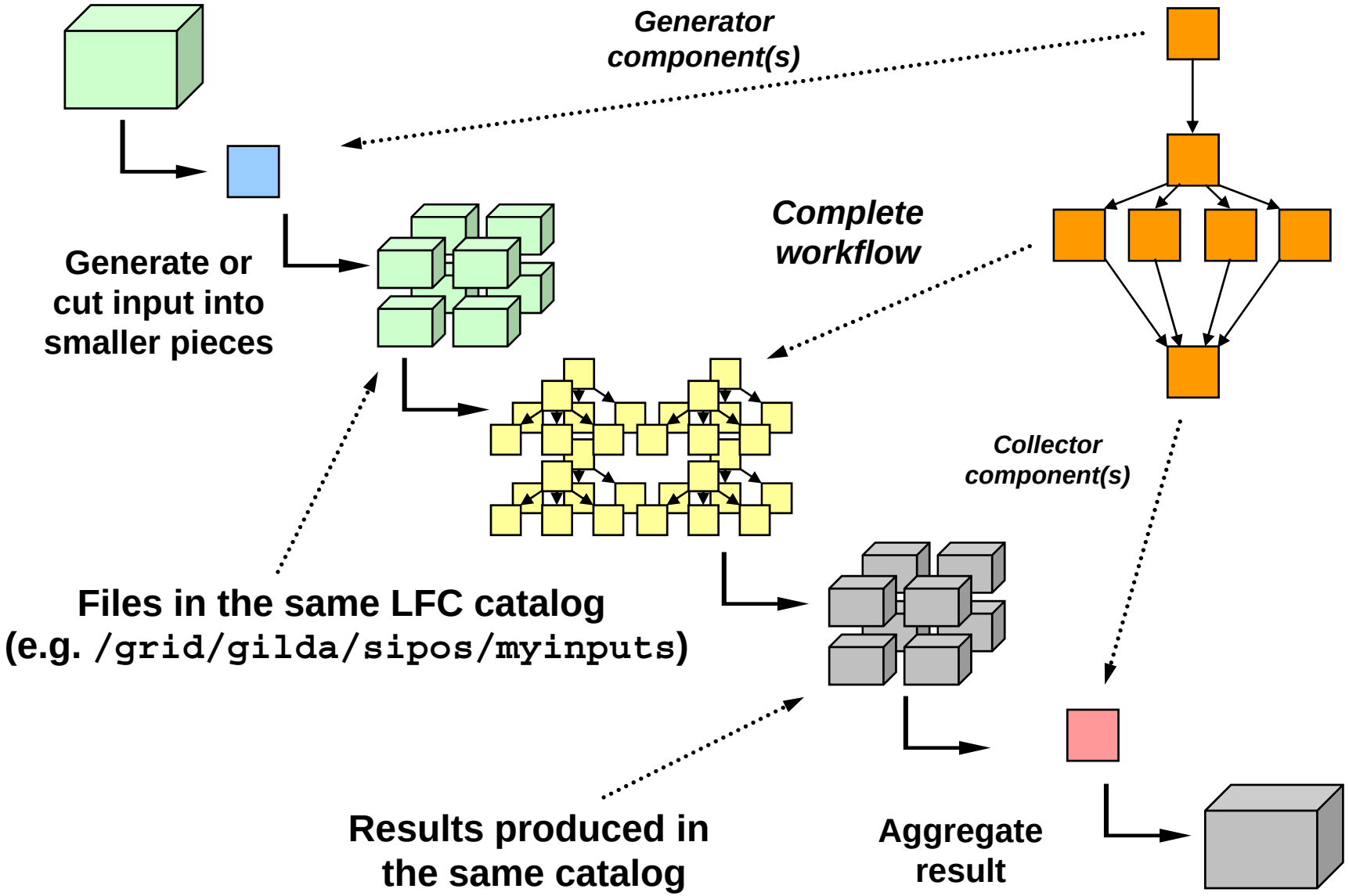
Advanced PS applications



PS applications in P-GRADE Portal 2.5



Advanced PS applications in P-GRADE Portal 2.5

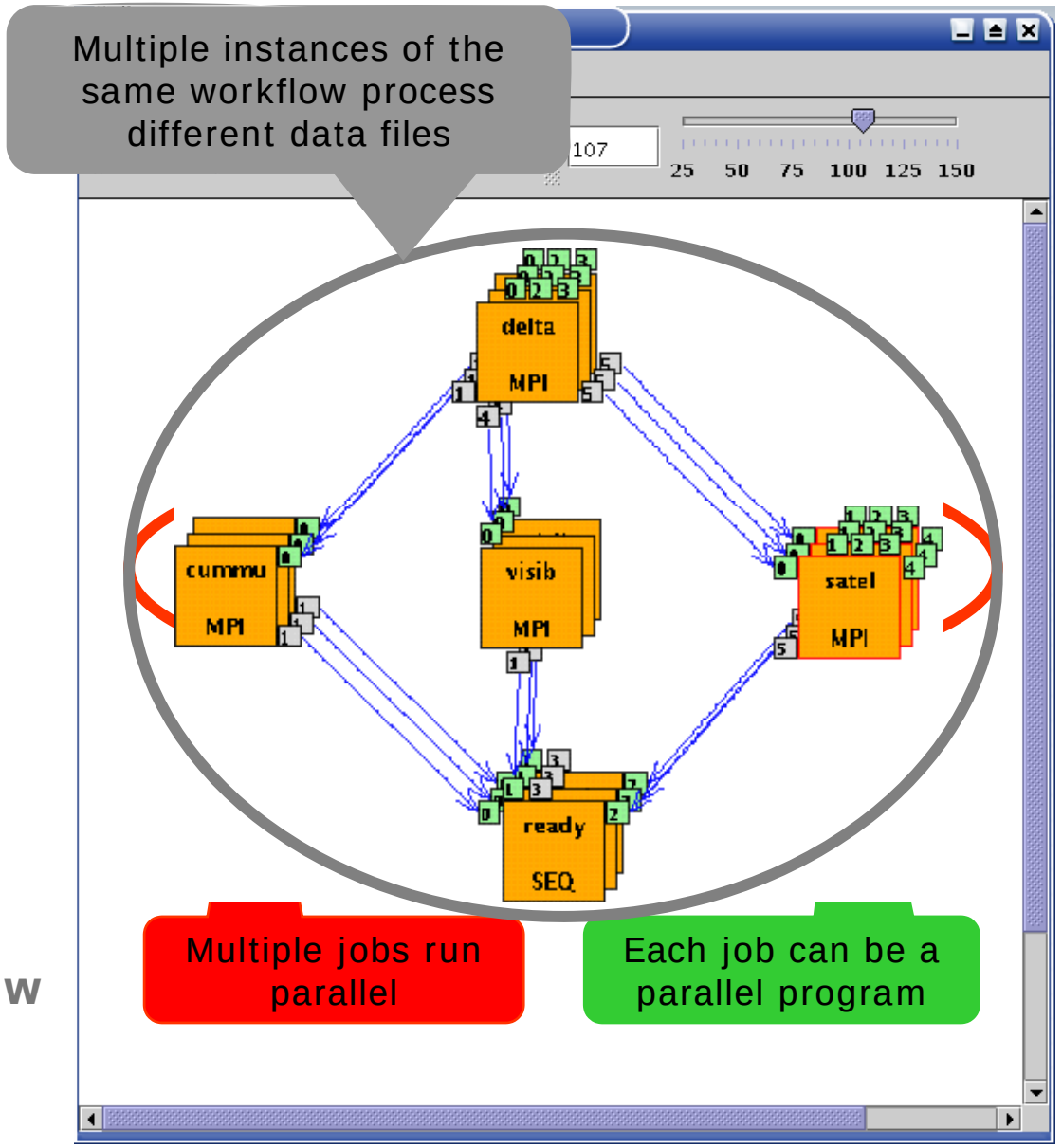


Third level of parallelism

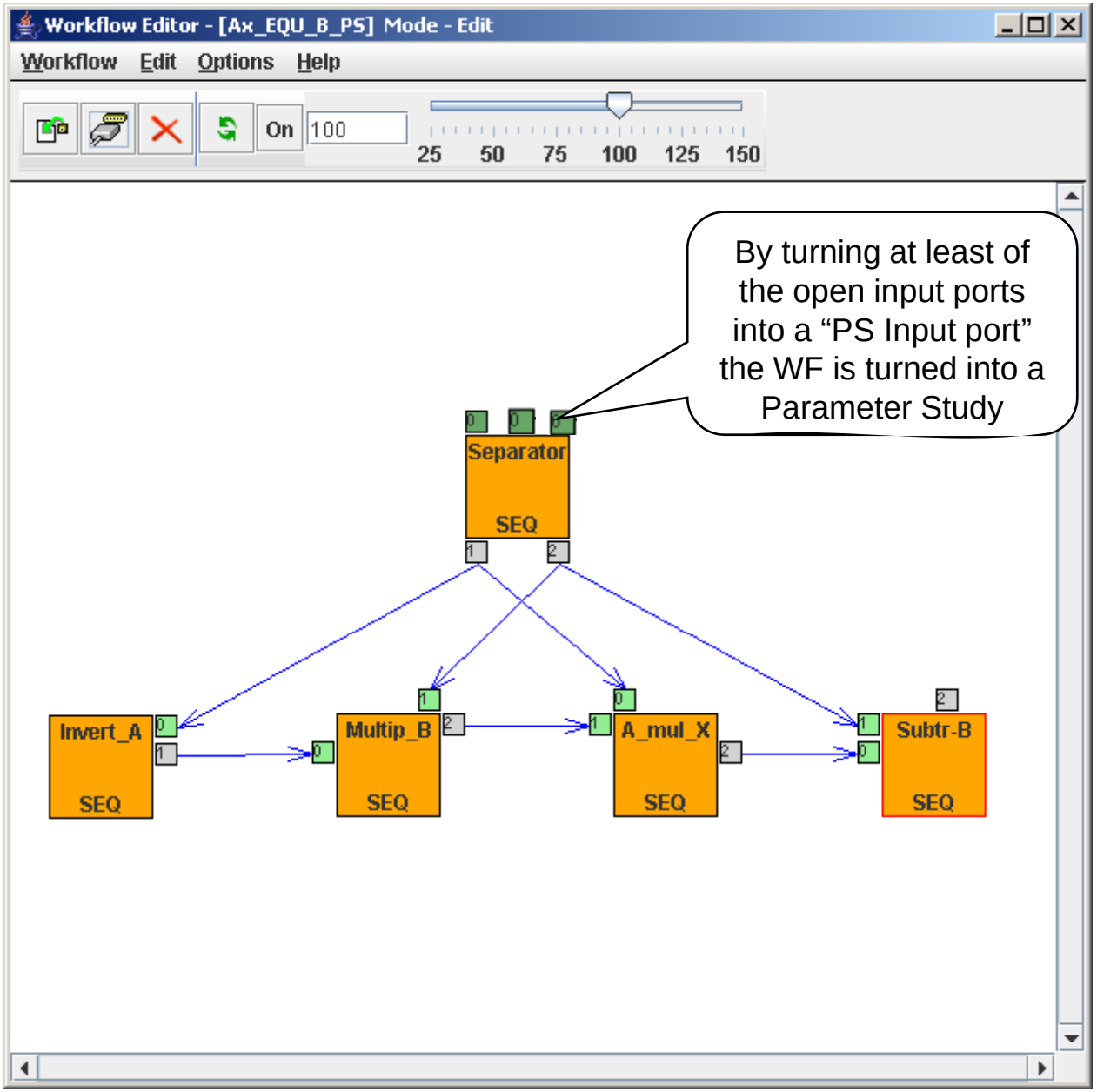
– **Parallel execution inside a workflow node (SIMD/MIMD/MISD)**

– **Parallel execution among workflow nodes (SIMD/MIMD/MISD)**

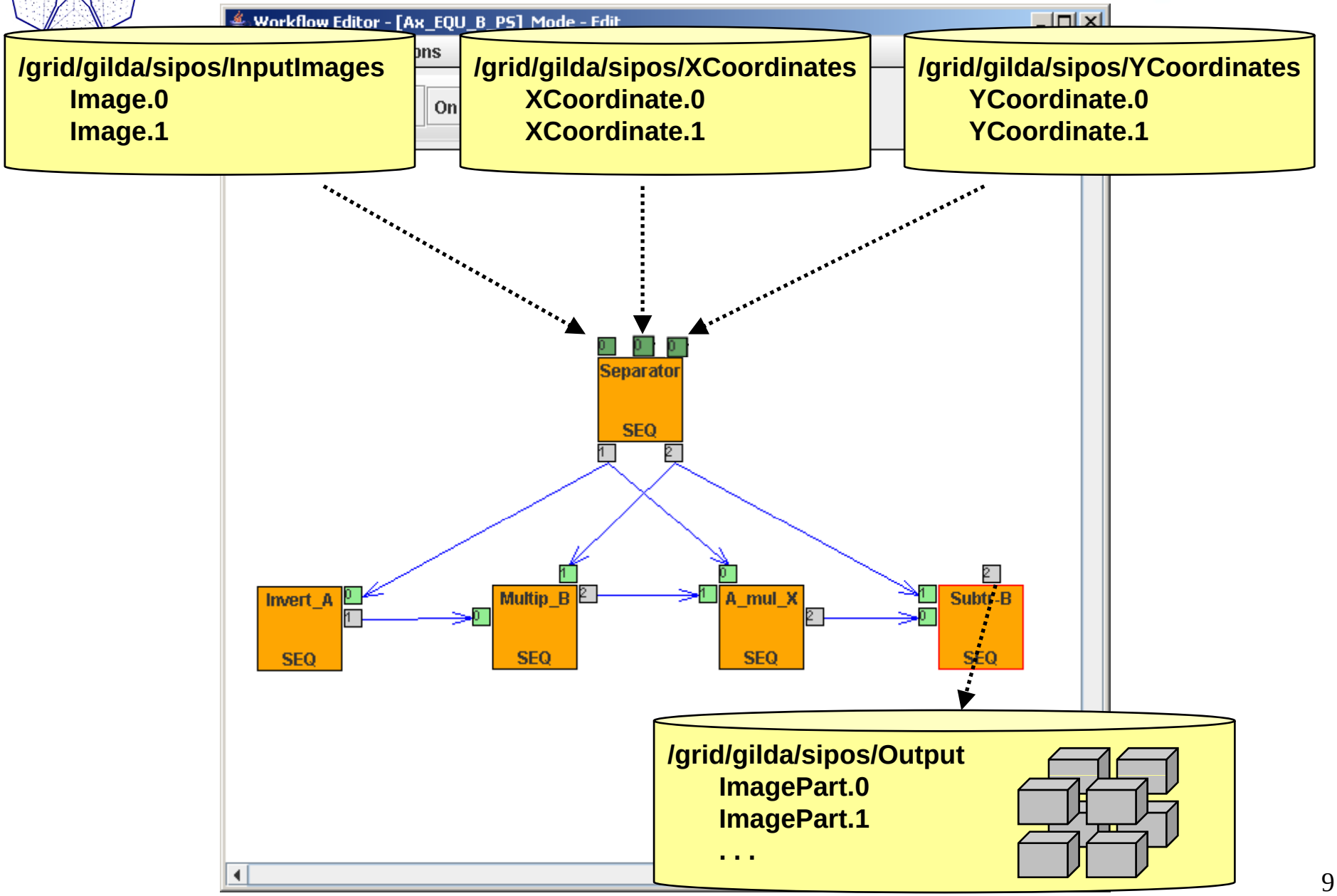
– **Parameter study execution of the workflow (SIMD)**



Turning a WF into a parameter study



Turning a WF into a parameter study



Generators

- Generate input files for parameter study workflows
- Saves these files on SEs, register them with LFNs into the LFC catalog

Auto generator

- Pre defined program logic (static binary)
- Generates text files
- User can control text file content by templates and patterns

Custom generator

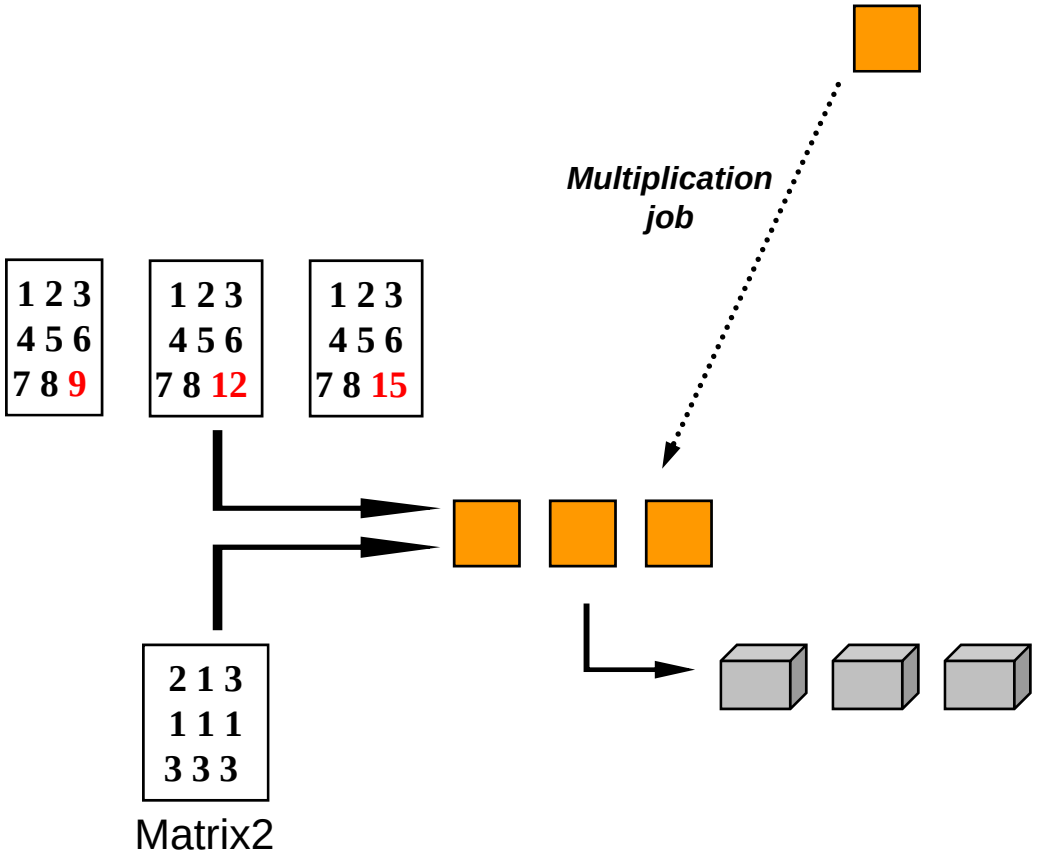
- User provides generator program logic
- Useful to generate binary content (e.g. image files, audio files, …)

Collector

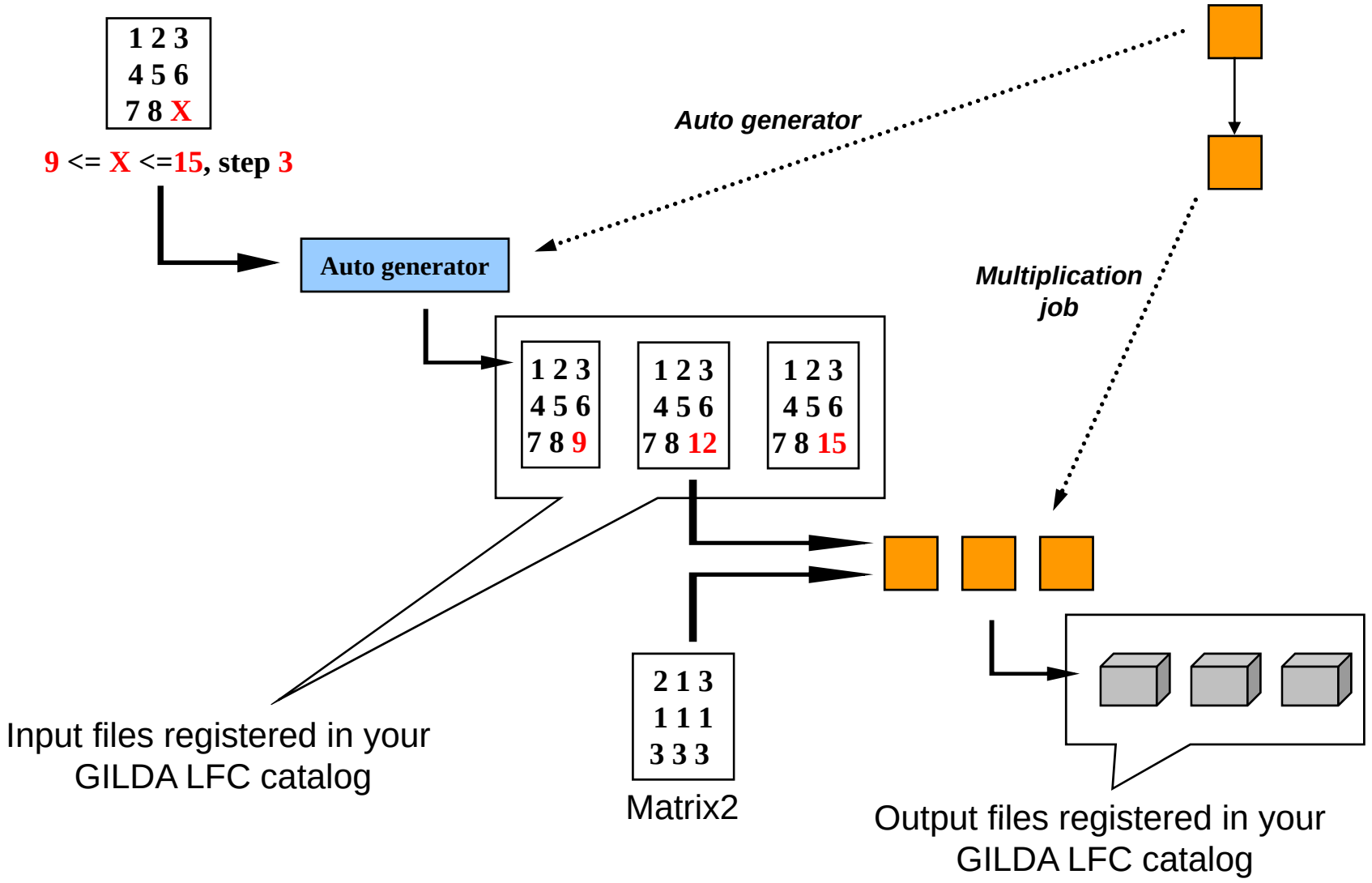
- Collects output files and perform collective operation on them. E.g.
  - Standard deviation
  - Average
  - Statistics
  - Evaluation and find the “best” result
  - …
- User provides the program logic
- Portal provides data transfer
  - Refer in your code to input files as local files
  - No need to use any Grid API in your code

Hands-on exercise

Matrix multiplication PS



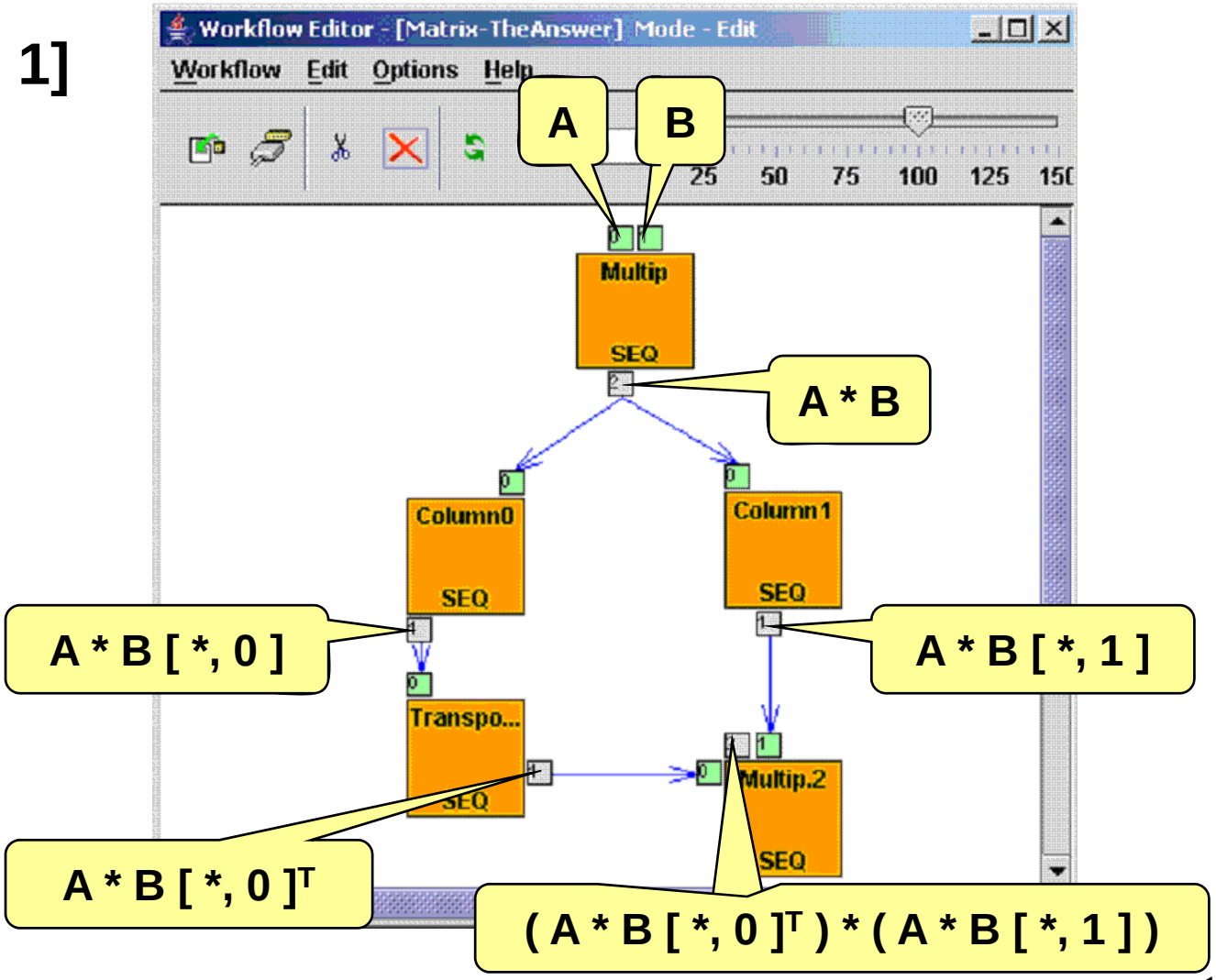
Hands-on exercise
Matrix multiplication PS



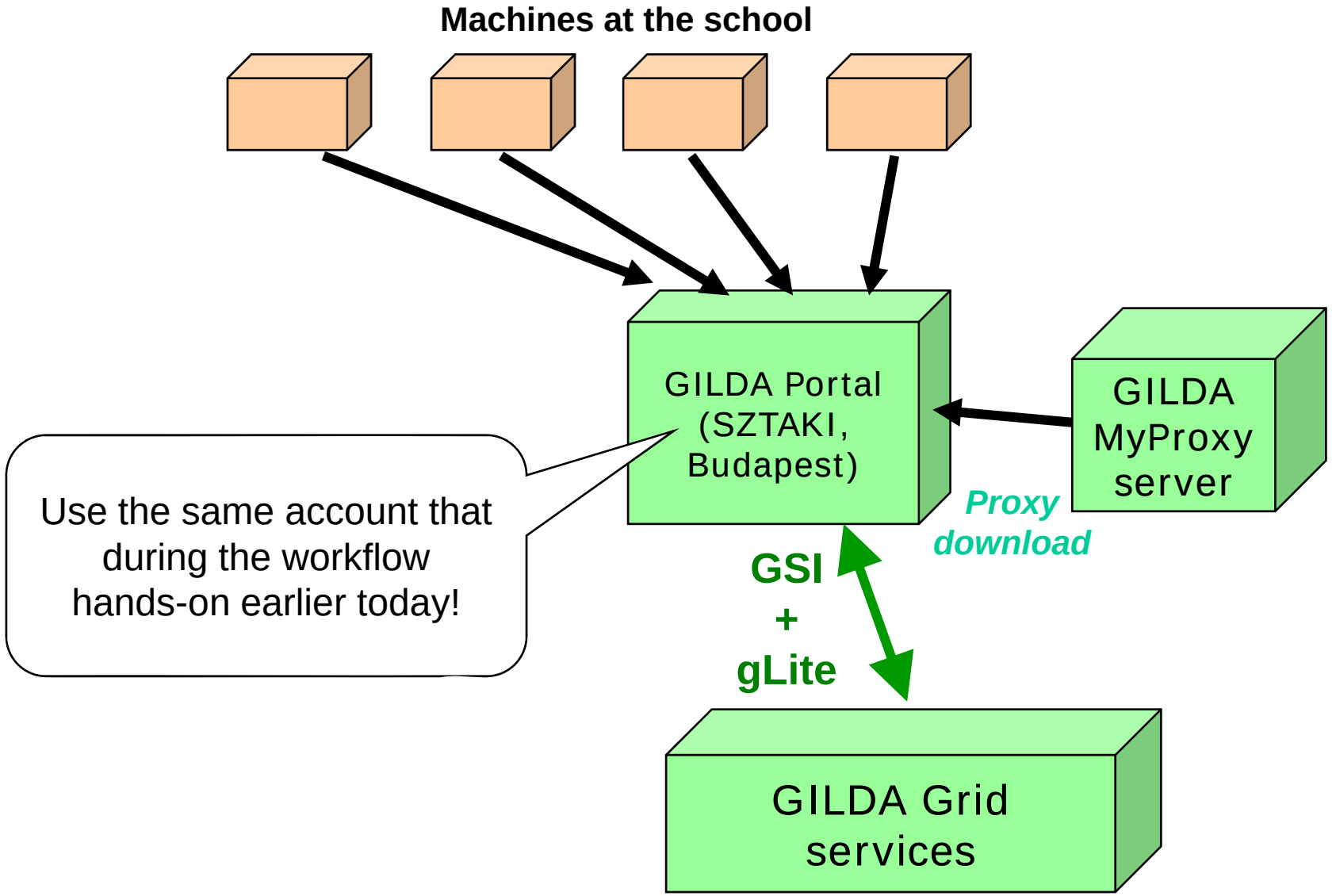
Hands-on exercise 2

Turn the matrix operations WF into a parameter study

AB[*, 0]^T * AB[*, 1]



Infrastructure for the hands-on



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