ER-flow Application Description Template

Application Name:
(will be used as workflow name in the repo)
MESTREAM

Application domain:
(choose one existing in the repo, otherwise will be created)
Astrophysics

Brief description of application
(explain implemented function, inputs, outputs, usage)
The aim of planned simulation is the study of meteor showers situated in the orbital phase space of the orbit of asteroid 2003 EH1. The real showers to compare the simulation results are mainly in 3 databases of the IAU Meteor Data Center (photographic, video, and radio-meteor databases), which are gradually enlarged. (The photographic database is managed by a team at our institute. This team will release a new version just in the next year, at “Meteoroids 2013” conference in Poznań, Poland.) Another problem are the outbursts of comet 29P/Schwassmann-Wachmann 1. The list of these events is known, but the actual reason is still discutable. One possibility are collisions with the meteoroid particles released from the comet itself. In both cases, we intend to simulate the process of creation of the meteoroid stream and study its dynamical evolution. The executable codes and scripts to perform the computations are ready and were used in a similar application.
After a (manual) emplacement of the input data and executable code from the user interface (UI) to the storage element (SE), these data and code are distributed, by a control script, to the individual computing elements (CEs) in the GRID environment. After the given task is done, the output data are returned, by the script, back to the SE. The completeness of the output can be checked manually. When all is done, the user moves the output data from the SE the UI (and, eventually, further to an archive medium).

data:
input data format: tar gz file
input data value range: 1 single tar gz file
output data format: tar gz file
output data value range: 1 single tar gz file
sample data (link): http://www.astro.sk/~mjakubik/WORKFLOWS/MESTREAM/
application (link): ----
documentation (link): http://www.astro.sk/~mjakubik/WORKFLOWS/MESTREAM/
publication (link): ----

Execution environment
DCI: (computing, data, VO, etc): VOCE VO, astro VO
middleware: gLite workflow system: WS-PGRADE

Execution characteristics
data size (per unit, typical number of units):

input	temporary	output
22 GB	----	~ 150 MB

processing time (per unit): 3 days (under the assumption that 100 CPUs are used)
memory usage: 200 MB (~ 2 MB per CPU) disk usage: ~ 23 GB (upper limit)

Target users
Community: astronomical; meteors
Projects (link): Slovak Grant Agency for Science (VEGA), Grant N. 0011

number of users: ----
user type: developer: 6 end-user: ----

Usage scenario for workflow in the ER-FLOW (how workflow will be reused, meta-workflow, how expected to contribute to project indicators, etc.).

Take this info from http://www.astro.sk/~mjakubik/WORKFLOWS/MESTREAM/

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