specifying domains for the DARPA Coor-
dinators program.

In realistic environments, actions
often have uncertain outcomes and can
have complex relationships with other
tasks. The planner approaches problems
by considering all possible actions that
may be taken from any state reachable
from a given, initial state, and from
within the constraints of a given task hi-
erarchy that specifies what tasks may be
performed by which team member.

This program was written by Bradley Clement,
Steven Schaffer, and Gregg Rabideau of Caltech
for NASA’s Jet Propulsion Laboratory. Further
information is contained in a TSP (see page 1).

This software is available for commercial li-
censing. Please contact Karina Edmonds of
the California Institute of Technology at
(626) 395-2322. Refer to NPO-44019.

Attitude-Control Algorithm
for Minimizing Maneuver
Execution Errors

A G-RAC attitude-control algorithm is
used to minimize maneuver execution
error in a spacecraft with a flexible ap-
pendage when said spacecraft must in-
duce translational momentum by firing
(in open loop) large thrusters along a de-
sired direction for a given period of time.
The controller is dynamic with two inte-
grators and requires measurement of
only the angular position and velocity of
the spacecraft. The global stability of the
closed-loop system is guaranteed without
having access to the states describing the
dynamics of the appendage and with se-
vere saturation in the available torque.

Spacecraft apply open-loop thruster fir-
ings to induce a desired translational mo-
mentum with an extended appendage.
This control algorithm will assist this ma-
neuver by stabilizing the attitude dynam-
ics around a desired orientation, and
consequently minimize the maneuver ex-
ecution errors.

This work was done by Behçet Açikmes¸e of
Caltech for NASA’s Jet Propulsion Laboratory.
The software used in this innovation is
available for commercial licensing. Please
contact Karina Edmonds of the California In-
itute of Technology at (626) 395-2322. Refer to NPO-44376.

Grants Document-Generation System

The Grants Document-Generation System (GDGS) software allows the gen-
eration of official grants documents for
distribution to the appropriate parties.
The documents are created after the se-
lection and entry of specific data ele-
ments and clauses. GDGS is written in
Cold Fusion that resides on an SQL2000
database and is housed on-site at God-
dard Space Flight Center. It includes ac-
cess security written around GSFC’s
(Goddard Space Flight Center’s) LIST
system, and allows for the entry of Pro-
curement Request information neces-
sary for the generation of the resulting
Grant Award.

This work was done by Terri Hairell, Lev
Kreymer, Greg Martin, and Patrick Sheridan
of the INDUS Corporation for Goddard
Space Flight Center. For further information,
contact the Goddard Innovative Partner-
ships Office at (301) 286-5810. GSC-
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