patterns are defined in simple, declarative statements that combine point events from given input streams with those from other streams, using conjunction, disjunction, and negation. Patterns can be built on one another recursively to describe very rich, temporally extended combinations of events. Thereafter, a run-time matching algorithm in CERA efficiently matches these patterns against input data and signals when patterns are recognized.

CERA can be used to monitor complex systems and to signal operators or initiate corrective actions when anomalous conditions are recognized. CERA can be run as a stand-alone monitoring system, or it can be integrated into a larger system to automatically trigger responses to changing environments or problematic situations.

This package incorporates algorithms for stereo ranging, visual odometry and unsurveyed camera calibration, and has unique support for very wide-angle lenses (as used on the Mars Exploration Rover HazCams). JPL gathers these algorithms into one uniform, documented, and tested package with a consistent C API (application programming interface). The software is designed for real-time execution (10–20 Hz) on COTS (commercial, off-the-shelf) workstations and embedded processors.

This package incorporates algorithms developed over more than ten years of research in ground and planetary robotics for NASA, DARPA (Defense Advanced Research Projects Agency) and the Army Research Labs, and is currently being used in applications as diverse as legged vehicle navigation and large-scale urban modeling.

TurboTech is applicable to composing technical evaluations of contractor proposals, task and delivery orders, change order modifications, requests for proposals, new work modifications, task assignments, as well as any changes to existing contracts.

This work was done by Dorothy J. Tiffany of Goddard Space Flight Center. Further information is contained in a TSP (see page 1). GSC-15554-1

In accordance with Public Law 96-517, the contractor has elected to retain title to this invention. Inquiries concerning rights for its commercial use should be addressed to:

I/NET
P. O. Box 3338
Kalamazoo, MI 49003
Phone No.: (269) 978-6816
Fax No.: (800) 673-7352
Refer to MSC-23637-1, volume and number of this NASA Tech Briefs issue, and the page number.

The JPL Robot Vision Library (JPLV) provides real-time robot vision algorithms for developers who are not vision specialists. The package includes algorithms for stereo ranging, visual odometry and unsurveyed camera calibration, and has unique support for very wide-angle lenses (as used on the Mars Exploration Rover HazCams). JPLV gathers these algorithms into one uniform, documented, and tested package with a consistent C API (application programming interface). The software is designed for real-time execution (10–20 Hz) on COTS (commercial, off-the-shelf) workstations and embedded processors.

This package incorporates algorithms developed over more than ten years of research in ground and planetary robotics for NASA, DARPA (Defense Advanced Research Projects Agency) and the Army Research Labs, and is currently being used in applications as diverse as legged vehicle navigation and large-scale urban modeling.

This work was done by Andrew B. Howard, Adnan I. Ansar, and Todd E. Litwin of Caltech and Steven B. Goldberg of Indelible Systems for NASA’s Jet Propulsion Laboratory.

This software is available for commercial licensing. Please contact Karina Edmonds of the California Institute of Technology at (626) 395-2322. Refer to NPO-46532.

The Iterator Perl Module provides a general-purpose framework for constructing iterator objects within Perl, and a standard API for interacting with those objects. Iterators are an object-oriented design pattern where a description of a series of values is used in a constructor. Subsequent queries can request values in that series. These Perl modules build on the standard Iterator framework and provide iterators for some other types of values.

Iterator::DateTime constructs iterators from DateTime objects or Date::Parse descriptions and ICal/RFC 2445 style re-