patterns are defined in simple, declara-
tive statements that combine point
events from given input streams with	hose from other streams, using con-
junction, disjunction, and negation.
Patterns can be built on one another re-
cursively to describe very rich, tempo-
urally extended combinations of events.
Thereafter, a run-time matching algo-

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

This work was written by William A.
Fitzgerald and R. James Firby of I/NET, Inc. for
Johnson Space Center. Further information is
contained in a TSP (see page 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 num-
ber of this NASA Tech Briefs issue, and the
page number.

TurboTech Technical Evaluation Automated System

Goddard Space Flight Center, Greenbelt, Maryland

TurboTech software is a Web-based
process that simplifies and semiauto-
mates technical evaluation of NASA
proposals for Contracting Officer’s
Technical Representatives (COTRs). At
the time of this reporting, there have
been no set standards or systems for
training new COTRs in technical evalua-
tions. This new process provides boil-
erplate text in response to “interview-
style” questions. This text is collected
into a Microsoft Word document that
can then be further edited to conform
to specific cases.

By providing technical language and a
structured format, TurboTech allows the
COTRs to concentrate more on the ac-
tual evaluation, and less on deciding
what language would be most appropri-
te. Since the actual word choice is one
of the more time-consuming parts of a
COTRs’ job, this process should allow
for an increase in quantity of proposals
evaluated.

TurboTech is applicable to composing
technical evaluations of contractor pro-
posals, task and delivery orders, change
order modifications, requests for pro-
posals, new work modifications, task as-

currences, as well as any changes to ex-
isting contracts.

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

Robot Vision Library

NASA’s Jet Propulsion Laboratory, Pasadena, California

The JPL Robot Vision Library (JPLV)
provides real-time robot vision algo-
rithms for developers who are not vi-
sion specialists. The package includes
algorithms for stereo ranging, visual
odometry and unsurveyed camera cali-

verse 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.

Perl Modules for Constructing Iterators

Goddard Space Flight Center, Greenbelt, Maryland

The Iterator Perl Module provides a
general-purpose framework for con-
structing iterator objects within Perl,
and a standard API for interacting with
those objects. Iterators are an object-ori-

tated design pattern where a descrip-
tion of a series of values is used in a con-
structor. 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 de-
scriptions and ICAl/RFC 2445 style re-
### Tropical Cyclone Information System

**NASA’s Jet Propulsion Laboratory, Pasadena, California**

The JPL Tropical Cyclone Information System (TCIS) is a Web portal (http://tropicalcyclone.jpl.nasa.gov) that provides researchers with an extensive set of observed hurricane parameters together with large-scale and convection-resolving model outputs. It provides a comprehensive set of high-resolution satellite (see figure), airborne, and in-situ observations in both image and data formats. Large-scale datasets depict the surrounding environmental parameters such as SST (Sea Surface Temperature) and aerosol loading. Model outputs and analysis tools are provided to evaluate model performance and compare observations from different platforms.

The system pertains to the thermodynamic and microphysical structure of the storm, the air-sea interaction processes, and the larger-scale environment as depicted by ocean heat content and the aerosol loading of the environment.

Currently, the TCIS is populated with satellite observations of all tropical cyclones observed globally during 2005. There is a plan to extend the database both forward in time till present as well as backward to 1998. The portal is powered by a MySQL database and an Apache/Tomcat Web server on a Linux system. The interactive graphic user interface is provided by Google Map.

*Images of Supertyphoon Pongsona* that struck the U.S. island of Guam on December 8, 2002. The composite image on left was made by overlaying data from the infrared, microwave, and visible/near infrared sensors. A standard image is on the right.

This work was done by P. Peggy Li, Brian W. Knosp, Quoc A. Vu, Yi Chao, and Svetla M. Hristova-Veleva of Caltech 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-45748.

### XML Translator for Interface Descriptions

**NASA’s Jet Propulsion Laboratory, Pasadena, California**

A computer program defines an XML schema for specifying the interface to a generic FPGA from the perspective of software that will interact with the device. This XML interface description is then translated into header files for C, Verilog, and VHDL. User interface definition input is checked via both the provided XML schema and the translator module to ensure consistency and accuracy.

Currently, programming used on both sides of an interface is inconsistent. This makes it hard to find and fix errors. By using a common schema, both sides are forced to use the same structure by using the same framework and toolset. This makes for easy identification of problems, which leads to the ability to formulate a solution.

The toolset contains constants that allow a programmer to use each register, and to access each field in the register. Once programming is complete, the translator is run as part of the make process, which ensures that whenever an interface is changed, all of the code that uses the header files describing it is recompiled.

This work was done by Elizabeth R. Boroson of Caltech 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-46447.