THE CONTEXT

Projects
Eclipse IoT open source projects help you build IoT Devices, Gateways ("Smart Objects"), Cloud backends, and more.
Use the list below to find the project that’s right for you.

Eclipse Paho
The Eclipse Paho project provides client and server reference implementations of open and standard compliant topics used in M2M (Machine-to-Machine) and IoT (Internet of Things) applications. Paho itself provides a set of classes to implement standard M2M/IoT topics such as PUBSUB, PUBREL, PUBREC, PUBCOMP, SUBACK, QoS 1 and QoS 2.
Thank you for your attention!

www.fokus.fraunhofer.de
(System Quality Center)
System Framework Design

- Complete the implement of the equipment
- Network card driver and LwIP transplantation
- Audio driver and navigation timing module driver
- Embedded operating system transplantation
- Hardware selection and board development
Result: Processing time functions and packages

<table>
<thead>
<tr>
<th>Approach</th>
<th>Eclipse</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 function calls</td>
<td>5946.71</td>
</tr>
<tr>
<td>50000 function calls</td>
<td>406.62 (176%)</td>
</tr>
<tr>
<td>500000 function calls</td>
<td>506.62 (176%)</td>
</tr>
<tr>
<td>5000000 function calls</td>
<td>2511.62 (179%)</td>
</tr>
<tr>
<td>50000000 function calls</td>
<td>5831.62 (179%)</td>
</tr>
<tr>
<td>500000000 function calls</td>
<td>13442.62 (217%)</td>
</tr>
</tbody>
</table>
Select Possible Values for Each Byte (3)

Based on the expert knowledge, we also want to turn on the signal lights for Tubes 1 & 2, Cylinders 1 & 2, and Valves 1 & 2 at the same time.

Possible values for “Package 1 - Byte 20”:
20; 10; 08; 04; 02; 01; 00; 30; 0C; 03
Importance of SQ Tradeoffs
Major source of DoD, other system overruns

- SQs have systemwide impact
  - System elements generally just have local impact
- SQs often exhibit asymptotic behavior
  - Watch out for the knee of the curve
- Best architecture is a discontinuous function of SQ level
  - "Build it quickly, tune or fix it later" highly risky
  - Large system example below

Diagram:
- $100M
- $50M
- Required Architecture: Custom, many cache processors
- Original Cost
- Original Spec
- After Prototyping
- Response Time (sec)
Testing approaches

Where do the tests get the test data?

In lab
In field

Traditional testing

In vivo testing

Testing
THE RESULTS OF AFFECTED TRACKING ALGORITHMS IN OP2

<table>
<thead>
<tr>
<th>Name of Trackers</th>
<th>Precision Score in Original Ground-truth</th>
<th>Precision Score in Revised Ground-truth</th>
<th>ABC Score in Original Ground-truth</th>
<th>ABC Score in Revised Ground-truth</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSK</td>
<td>0.810</td>
<td>0.815</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFT</td>
<td></td>
<td>0.598</td>
<td>0.22</td>
<td></td>
</tr>
</tbody>
</table>
The mathematical theory of evidence, as introduced by Dempster and extended later by Shafer, is concerned with the question of belief in a proposition and systems of propositions.

This theory can be viewed as a generalization of the classic probability theory. Due to its ability to handle uncertainty or imprecision embedded in the evidence, the D-S theory has been increasingly applied in many fields.
1st IEEE International Software Testing Contest
2nd place
Marek Suchánek
Czech Technical University in Prague,
Czech Republic

3rd place in Prize
Alexandre Rivières, Canada
2nd place
Pavel Suchánek
Practical University in Prague,
Czech Republic

3rd place
Alexandre Boucher
of Trois-Rivières, Canada
Li, Guangzhou University, China
Ku, Suzhou University, China
Lichter, Hasso Plattner Institute, Germany
Liu, Dalian University of Technology, China
Mombaye, Hasso Plattner Institute, Germany
Pruzi, Graz University of Technology
Morán Barbón, University of Oviedo
Software Testing Contest: Honorable Mention

4th place: Wenjun Li, Guangzhou University, China
5th place: Youran Xu, Suzhou University, China
6th place: Daniel Richter, Hasso Plattner Institute, Germany
7th place: Qiang Li, Dalian University of Technology, China
8th place: Lena Feinbube, Hasso Plattner Institute, Germany
9th place: Oliver Tazl, Graz University of Technology, Austria
10th place: Jesús Morán Barbón, University of Oviedo, Spain
QRS 2017

Best Paper Award

Presented to

SOLOMON MENSAH, JACKY KEUNG,
STEPHEN G. MACDONELL, MICHAEL F.
BOSU, AND KWABENA E. BENNIN

for the paper titled

Investigating the Significance of Bellwether
Effect to Improve Software Effort Estimation
2 iPads
Eaton European Innovation Center in Roztoky, Czech Republic
&
Boxtrap spol. s r.o., Czech Republic
Paper Award
presented to
Petr Roček
and Jiří Barnat
for the paper titled
"Using Off-the-Shelf Components to Detect and Verify"
Best Paper Award

Presented to

Vladimir Strecha and Petr Rockaj

Paper: "Assurance of Perception Support Verification for the paper "Using Off-the-Shelf ECA Components in..."
QRS 2018
The 2018 IEEE International Conference on Software Quality, Reliability & Security
Lisbon, Portugal — July 16—20
http://paris.utdallas.edu/qrs18