ACL2 User Support

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J Strother Moore

The University of Texas at Austin

April 26, 2016
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- Today I’ll discuss our focus on ACL2 users.
  - Very high-level, but feel free to ask for details
**Focus on Users**

- Responsiveness to requests
- Debugging tools (both for proofs and for programming)
- Documentation: web and emacs, system and books; [DEMO]: (DEBUGGING and GL)
- Helpful output, including:
  - Useful error and warning messages
  - Gag-mode [DEMO]
  - Printing [DEMO]
- Support for efficient programming; e.g., Centaur writes many tools in the ACL2 programming language
- Support for several platforms
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RELEASE NOTES (1)

Quoting from a paper to appear in the Philosophical Transactions of the Royal Society:
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The release note records indicate that Centaur has been engaged with ACL2 since 2009. ACL2 Version 3.5 was released in May, 2009, and so we start our statistics gathering there and go through Version 7.2, released in January, 2016. We count the changes requested by Centaur, by category.

<table>
<thead>
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<th>Category</th>
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<tr>
<td>Changes to Existing Features</td>
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<tr>
<td>New Features</td>
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<tr>
<td>Heuristic and Efficiency Improvements</td>
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<td>Bug Fixes</td>
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<td>Changes at the System Level</td>
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</table>
**Release Notes (2)**

The changes on the preceding slide include:

- Improved facilities for documentation, warning, and error messages
- New features, e.g.:
  - Lisp-level: wall-clock time, Common Lisp compiler directives like inlining, ...
  - Faster I/O
  - New read macros supporting Verilog syntax
  - Fundamental new features like congruent and nested single-threaded objects (stobjs), as well as patterned congruences used in our x86 work, as are abstract stobjs
- Performance improvements
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Release Notes (3)

Release note counts:

2012, Version 5.0: 125
2012, Version 6.0: 53
2013, Version 6.1: 26
2013, Version 6.2: 41
2013, Version 6.3: 36
2014, Version 6.4: 27
2014, Version 6.5: 49
2015, Version 7.0: 82
2015, Version 7.1: 52
2016, Version 7.2: 91
## Code Size

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“Thank you for changing the ACL2 license to the 3-clause BSD license. It’s a really big deal for us (and our lawyers)!”
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  ... as well as in academia and government.
- ACL2 has become a reasonably mature tool, but continued use presents continued opportunities for making users happier!