

# Differences between R3.13 and R4.0

/Acquiring CADiZ

## 1. Changes to parser for conformance with ISO Standard Z:

- a) precedences of prefix and postfix operators no longer specified explicitly;
- b) limit of 9999 on operator precedence revised to 4294967095;
- c) operator templates must be unique;
- d) operators that share a word must have same precedence;
- e) lexis of words and numerals changed to be in terms of UCS/Unicode character properties.

## 2. Changes to L<sup>A</sup>T<sub>E</sub>X mark-up for conformance to ISO Standard Z:

- a) new mark-up directives—`%%Zopchar` etc—to define conversion to UCS/Unicode characters;
- b) scrapped `%%glyph` directives, as UCS/Unicode can be mapped to screen easily;
- c) argument of `\comment` is now a string literal within braces;
- d) mark-up of `,,` may use `\listarg` to avoid space between commas;
- e) in tactics, `—`, `---`, `++` are now marked-up as `\lor`, `\parallel` and `\strapp`, and some `•` characters are marked-up as `\endpat`.

### 3. Improvements to the theorem prover:

- a) errors in unrelated sections no longer disable inferences (though inferences in erroneous sections are still disabled);
- b) added `numb` jokers and `_numb` wildcard;
- c) added `str` jokers and `_str` wildcard;
- d) added absorptions for newline conjunctions;
- e) extended heuristic decision to work with empty schemas;
- f) made heuristic decision exploit linear constraints;
- g) tactic `Leibniz_tac` built-in for speed.

### 4. Other changes:

- a) added generation of XML;
- b) new options `-UTF8`, `-UTF16BE` and `-UCS4` to select UCS encoding;
- c) replaced option `-B` by option `-Ggeom`, which specifies a particular geometry for the user interface.

### 5. And bug fixes too numerous to enumerate.

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