

Release Notes for XXICC revision 0.0g

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This document describes enhancements and bug fixes for XXICC revision 0.0g, released 2 June 2013. 0.0g makes minor GalaxC compiler improvements and major improvements to XOE figure editing.

1. GalaxC Language

See *Programming in the GalaxC Language* rev 0.0g for details.

- Added restricted type arguments (§9.4). Previous versions of GalaxC had unrestricted type arguments, created using the syntax:

```
type arg T
```

An unrestricted type arg *T* can be bound to any non-quasi-type.

If you want to restrict *T* to base type *S* and its subtypes, use the syntax:

```
type(S) arg T
```

Restricted type args are used for generic macros and inlines that only apply to *S* and its subtypes instead of all non-quasi-types.

- Added a new way to create types that are pointers to subtypes of other base types (§8.3.6). This is particularly useful for creating pointer subtypes of structures. Previous versions of GalaxC required you to create a dummy type and then define a pointer to it. 0.0g allows you to hide the dummy type and just define the pointer.

Revision 0.0g makes a slight change to the definition of “typedef τ = @amorph” in `gxclib.gal`. The new version uses “@subtype(unknown)” instead of “subtype(@unknown)”, which is no longer legal.

2. XOE

XOE figure editing has many improvements in 0.0g. See Chapter 8 of *The XXICC Anthology* for the latest version of the “XOE Figure Editing”. Here are the major changes:

- Added rotation and mirroring.
- Added automatic updating of submods when re-grouping a submod or pasting components into a figure, with automatic connectivity reanalysis.
- Added manual update command **u** for updating the components of a figure to the latest versions.

- Added special Paste behavior to replace selected components with instances of a single component in the clipboard.
- Added `FIGtext` invisibility and `i` command to toggle invisibility.
- Handle component text that was attached to an instance before its submod is ungrouped, so that it reattaches properly when the submod is regrouped.
- Copy to clipboard now aligns to a single component's origin or to the origin lines.
- XOE now snaps to the origin lines in preference to the grid.
- See Section 8.9 of *The XXICC Anthology* for an updated list of figure editing issues.

3. G-SWIM

- Added font rotation.
- Added new text functions “rotwidth of text” and “glyph box of text”.

4. Bug Fixes

- Fixed Issue #16: “Problem compiling comma expression”.
- Fixed Issue #17: “Error pasting from documents with figures in 0.0f”.
- Fixed a bug in the automatic Make capability in the compiler that caused problems after changing `gxclib.gi`. This only affected Windows versions in practice.