

VOUnits

Joint applications / semantics

IVOA meeting

Champaign, Urbana, 2012 May 21



Outline

- Units 1.0 document
- Feedback
- Unity library
- Changes and PR



Units 1.0 document

- Working Draft 2011 December 16
- Major rework of previous versions
- Structure of the document :
 - Introduction & Scope
 - Current use of units in astronomy
 - Proposal for VOUnits
 - Use cases and applications



VOUnits goals and definitions

- VOUUnits deal with unit labels (not plain text or typography)
- Base symbols (m), prefixes (k), symbols (km), mathematical operators
- Do not reinvent the wheel, ensure maximum compatibility & least surprise
- Do not prescribe mandatory units for quantities



Current use

- IAU 1989 : SI-flavoured typography for publications
- NASA OGIP FITS files
- Standards for astronomical catalogues (used at CDS)
- FITS 2010 specification
- + few others



Proposal & applications

- 8 pages of systematic comparisons of the major specifications
- Make everything explicit
 - charset, case-sensitivity
 - base symbols
 - prefixes
 - math combinations
- tl;dr : use FITS 2010 specification



Feedback received

- Wiki page opened for dicussing a few points

<http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/DiscussionOnVOUnits>

- Only Markus Demleitner & Norman Gray...
- Use FITS 2010 specification with clarifications (grammar) & minor adjustments



Points discussed and differences with FITS 2010

- Electric resistance

- ohm (OGIP) and/or Ohm (StdCats&FITS)
- do we even care? (never used in 300.000 columns)
- suggestion : use only «Ohm »
- **OGIP** **StdCats** **FITS**

- Micro-arcseconds

- mas is a lost cause (IAU recommends nrad – 1nrad~0.2mas)
- Do we use uas, prad, uarcsec?
- uarcsec : **OGIP** **StdCats** **FITS**



Points discussed and differences with FITS 2010

- OK to not include deprecated symbols : dyn, cal, bar, atm, Gal, eotvos, gamma, oersted
- More than one solidus ? « km/s/Mpc »
 - IAU forbids it
 - OGIP, StdCats, FITS discourage
 - Grammar : allowed or forbidden
- No unit : empty string (rather than --- or blanks)
- Unknown : ? or empty string



Unity library

- <https://bitbucket.org/nxg/unity>
- Tokenize, parse, validate unit labels
- Make formal grammar used explicit



Moving to PR

- New document, with a few modifications and clarifications
- Distribute, 2 weeks discussion and then PR
- Add annex with explicit list of differences for OGIP, cat stds, FITS 2010 wrt VOUnits
 - not normative, but informative for implementation

