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on behalf of the GILDAS developers

8th IRAM Millimeter Interferometry School

Oct. 15 - 19 2012, Grenoble

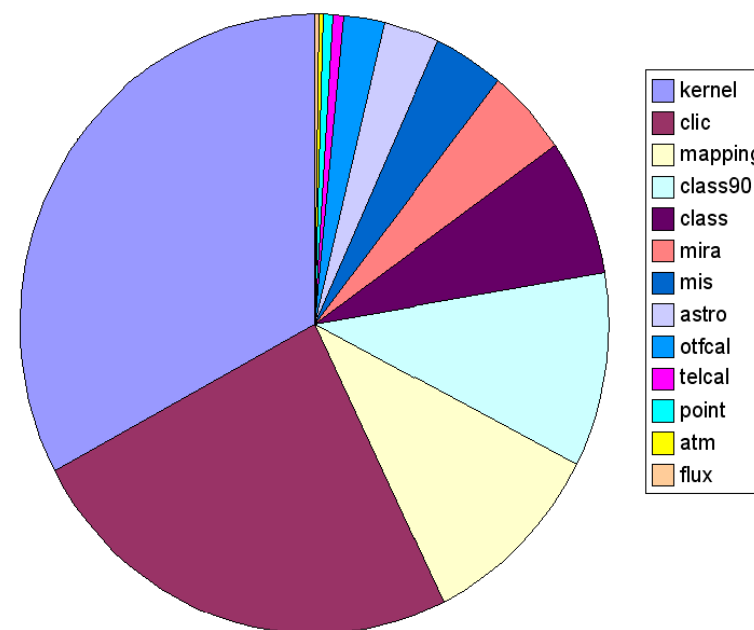
Scope: I. Softwares at IRAM

- Many different kinds of softwares at IRAM:
 1. Proposal and scheduling (statistics, dynamic scheduling, pool observing).
 2. Preparation of observations, *e.g.* setups.
 3. Data acquisition:
 - 3.1 Low level, *e.g.* hardware control (antennae, receivers, correlators, etc...)
 - 3.2 High level, *e.g.* operator and observer interface.
 4. Data archiving.
 5. Data reduction and analysis (single dish + interferometry).
 6. Generic plot package.
- GILDAS deals only with a subset. Points: 2, 3.2, 5 and 6.

Scope: II. GILDAS at IRAM 425 000 executable lines

- Common facilities
 - Command line interpreter: **SIC**;
 - Graphical possibilities: **GREG**
(1D: curves, 2D: images, 3D: spectra cubes).
 - Preparation of observations: **ASTRO, MOPSIC**.
- 30m
 - Bolometer + Monitoring: **MOPSIC**;
 - Spectroscopy: **TELCAL + MIRA + CLASS**.
- PdBI
 - Calibration: **CLIC**;
 - Imaging + Deconvolution: **MAPPING**.
- ALMA
 - Simulator: **MAPPING @ alma.map**;
 - Holographies of ALMA antennae are done in **CLIC** at San Pedro.

Gildas packages



GILDAS Strengths

- Large range of supported systems: Linux, Mac/OSX, Windows.
- Light weight: Data reduction and analysis possible on laptops.
- 29 years of history
 - ⇒ Accumulated expertise.
- Powerful advanced tools, e.g.
 - Easy single-dish OTF processing;
 - Easy interferometric mosaicing;
 - General fitting routines.

GILDAS users

- IRAM AODs: Instrument monitoring, data pipelining.
 - IRAM users: Data reduction.
 - Others:
 - CLASS is used in many facilities (e.g. APEX, CSO, NANTEN2, GBT, HHT, Effelsberg, Kosma, ...); CLASS is partly used by Herschel/HIFI, SOFIA, 45m.
 - ALMA: (Single Dish characterization in San Pedro).
- ⇒ GILDAS evolutions must be thought with all users in mind.

People

- People participating in one way or another

IRAM/Grenoble R. Zylka, J.M. Winters, E. Reynier, V. Pietu, J. Pety, R. Neri, M. Lonjaret, F. Gueth, P. Gratier, A. Castro-Carrizo, D. Broguière, M. Bremer, S. Bardeau.

IRAM/Granada H. Ungerechts, A. Sievers.

LAOG/Grenoble P. Hily-Blant, R. Lucas, S. Maret.

L3AB/Bordeaux S. Guilloteau.

- Large code contributors: ~ 5.0 FTE/yr

R. Zylka MOPSIC.

H. Ungerechts PAKO.

A. Sievers MIRA.

E. Reynier kernel + OMS.

V. Pietu CLIC + RDI.

J. Pety kernel + TELCAL + CLASS + MAPPING.

F. Gueth CLIC + ASTRO.

A. Castro-Carrizo CLIC pipeline.

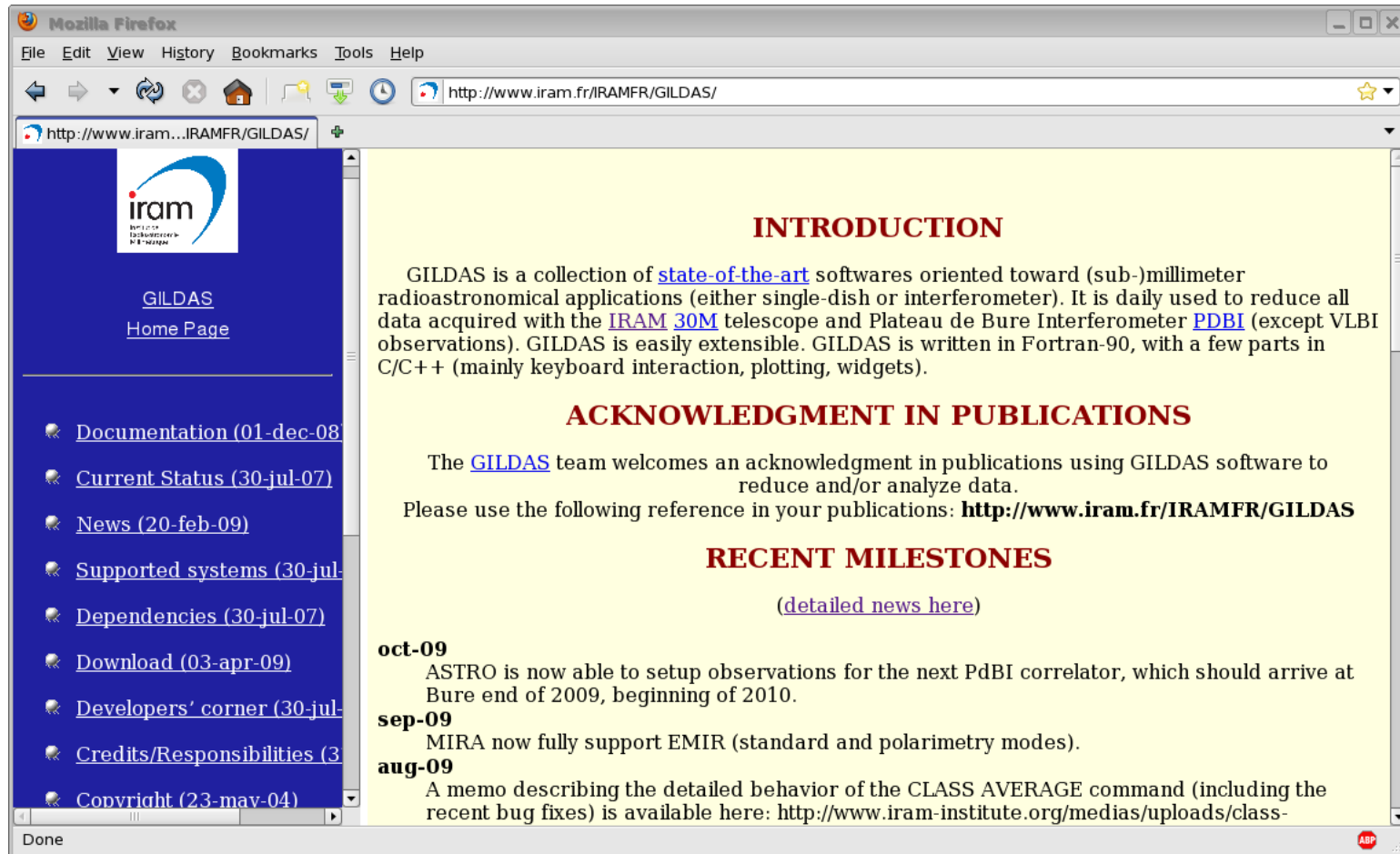
S. Bardeau kernel (including the python binding) + CLASS.

P. Hily-Blant + **S. Maret** CLASS/WEEDS.

S. Guilloteau Kernel + MAPPING.

User support:

I. Web page <http://www.iram.fr/IRAMFR/GILDAS>



The screenshot shows a Mozilla Firefox browser window with the address bar set to <http://www.iram.fr/IRAMFR/GILDAS/>. The page content is as follows:

iram
Institut de Radioastronomie Millimétrique

[GILDAS Home Page](#)

- [Documentation \(01-dec-08\)](#)
- [Current Status \(30-jul-07\)](#)
- [News \(20-feb-09\)](#)
- [Supported systems \(30-jul-07\)](#)
- [Dependencies \(30-jul-07\)](#)
- [Download \(03-apr-09\)](#)
- [Developers' corner \(30-jul-07\)](#)
- [Credits/Responsibilities \(30-jul-07\)](#)
- [Copyright \(23-mav-04\)](#)

INTRODUCTION

GILDAS is a collection of [state-of-the-art](#) softwares oriented toward (sub-)millimeter radioastronomical applications (either single-dish or interferometer). It is daily used to reduce all data acquired with the [IRAM 30M](#) telescope and Plateau de Bure Interferometer [PDBI](#) (except VLBI observations). GILDAS is easily extensible. GILDAS is written in Fortran-90, with a few parts in C/C++ (mainly keyboard interaction, plotting, widgets).

ACKNOWLEDGMENT IN PUBLICATIONS

The [GILDAS](#) team welcomes an acknowledgment in publications using GILDAS software to reduce and/or analyze data.

Please use the following reference in your publications: <http://www.iram.fr/IRAMFR/GILDAS>

RECENT MILESTONES

([detailed news here](#))

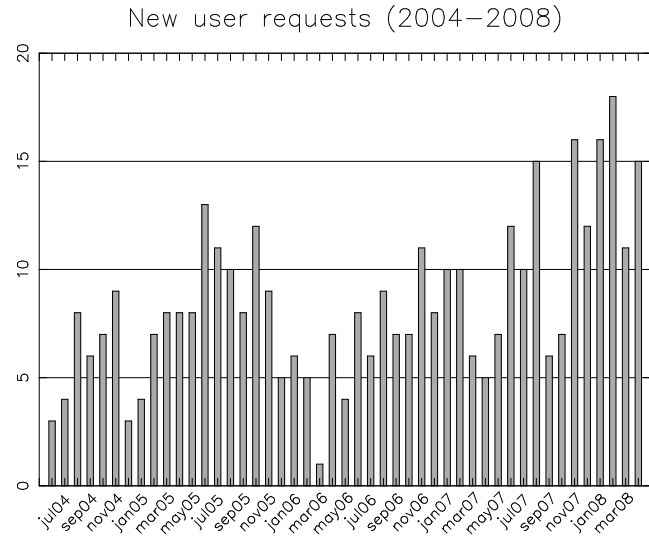
oct-09
ASTRO is now able to setup observations for the next PdBI correlator, which should arrive at Bure end of 2009, beginning of 2010.

sep-09
MIRA now fully support EMIR (standard and polarimetry modes).

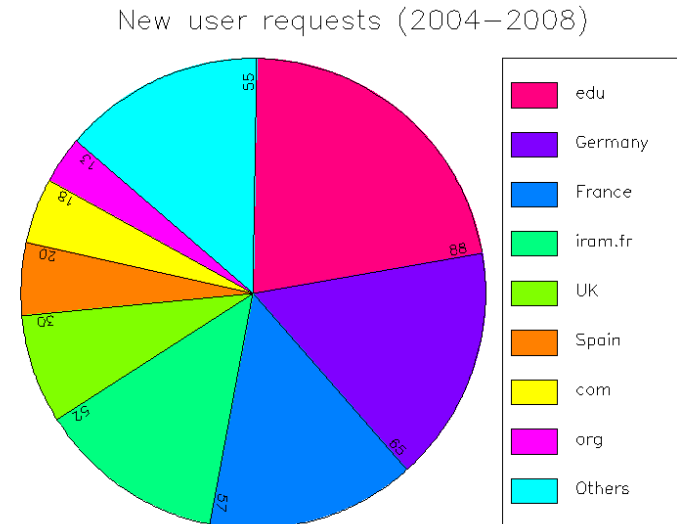
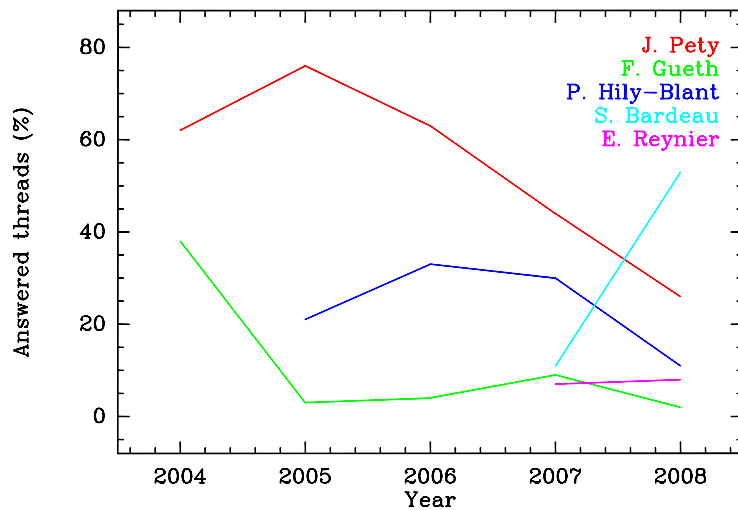
aug-09
A memo describing the detailed behavior of the CLASS AVERAGE command (including the recent bug fixes) is available here: <http://www.iram-institute.org/medias/uploads/class->

User support:

II. answers to gildas@iram.fr



- Total number of threads: 398.
- Median time to
 - First answer: 11h;
 - Final answer: 32h.



Bug report: I. Wrong way

Hi,

I have just stumbled on an obnoxious bug which prevents me from making the discovery of the century. I will defend my PhD thesis tomorrow. Fix this bug in the coming minutes.

Toto.

Bug report: II. Right way

Dear Gildas team,

Your software is great. For the first time in my life, I encountered a segmentation fault using it. I succeeded to reproduce the bug with a simple list of commands. I attach the following information: version of gildas I am currently using, list of commands and the data set to reproduce the bug. I hope this will help you solve the bug in the coming months. Continue the great work.

Best regards, Toto.

gildas version: dev (07oct08 13:45) (x86_64-fedora6-ifort) source tree

List of commands:

LAS90> file in test

LAS90> find

Blablalbla...

Segmentation fault

Data set attached: test.30m

No software is the answer to all these:

- Best (*i.e.* most recent) computing technology.
- Best portability.
- Best speed.
- Best ease of use (CLI and GUI).
- Best (*i.e.* shortest) learning curve.
- Best functionalities.
 - Best data calibration methods.
 - Best data mapping methods.
 - Best (*i.e.* most complete) analysis methods.
 - Best graphical possibilities.
- Best cost.

Strategy

- Maintain high-quality software for IRAM instruments while staying open to outside world.
 - Focused but generic developments;
 - In/out fillers;
 - Python binding.