CICADA Note #1

Configurable Instrument Collaboration for Agile Data Acquisition (CICADA) Project Notes

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ABSTRACT

We establish a notes series for the Configurable Instrument Collaboration for Agile Data Acquisition (CICADA) project. The note series will enable efficient and accurate implementation of radio astronomy detectors for a wide variety of astronomical observations. The motivation, topics and file format conventions are presented. The present document is the first of the series.

The project notes are available on the web at:

`http://wiki.nrao.edu/bin/view/Projects/CicadaNotes`

Change Record

Revision	Date	Author	Sections/Pages Affected
	Remarks		
1.0	2007-May-03	G. Langston	All
	Initial version that gets the bugs out of the system.		

1. Motivation

We propose to establish an informal series of numbered memoranda on the subject of Configurable Instrument Collaboration for Agile Data Acquisition (CICADA) developments. The series is motivated by NRAO's successful experience in developing collaboration by organizing documenting in freely available collections of research notes. The present document is the first of the series.

Topics to be covered include: Pulsar, spectroscopy and transient event science requirements; CICADA programming techniques; MATLAB; Simulink; Pulsar data display and reduction techniques; Spectroscopy data display and reduction techniques; Real-time monitor and control of hardware; Data Archiving; and any related matters.

Memo series of this type have been used in many other projects at the NRAO, and have been very successful in providing a way to organize information and allow for its rapid and widespread dissemination. (For example see memo 1 of the OVLBI series at `http://www.gb.nrao.edu/ovlbi/memos.html`) For those who are not familiar with the concept, the basic ideas are as follows. Any interested person may write and submit a technical memo on a subject relevant to the series. A central distribution point is established to receive contributions, assign each a sequence number, enter it into an index, and send copies to those who have asked to be on a mailing list. The contributions are not reviewed by anyone, and therefore have no official status whatsoever; they can, and often do, contain preliminary ideas and opinions. The numbered memos can then be referred to in future work, and since most people actively working on a given project will have copies, there is a common, written basis for discussions. Of course, this is no substitute for formal documentation of actual design decisions.

2. Contributions

Contributions will be accepted from anyone, at any institution, worldwide. The only guidelines are that the memos should be closely related to the subject of the series, and should kept reasonably brief. Copies of papers or data published elsewhere should not be included, but references should be given. Voluminous information (like long listings) that might be of value to only a few readers should be omitted, but instructions for finding that information should be given.

Submission of contributions in machine-readable form is encouraged. Normally the author will be given an account and password to allow editing of the "NRAO Wiki" project web pages. The author will update the index and attach the files to the web page.

Preferred file format is either ASCII text or PDF. If documents are generated based on TeX or Word input, these files should also be included. File name conventions for the series is as follows:

```
File name    extension        File type
==========  =========        ==================
cicadaNote001.txt            Plain text format input memo 1
cicadaNote001.pdf            PDF format memo for memo 1
cicadaNote001.tex            LaTeX format input for memo 1
cicadaNote001Fig1.ps         Postscript Format figure 1 of memo 1.
cicadaNote001Fig2.ps         Postscript Format figure 2 of memo 1.
cicadaNote001.ps             Postscript format memo 1 (discouraged)
cicadaNoteLogo.ps            Postscript Logo for CICADA notes
```

To facilitate LaTeX format contributions having a common format, the notes page has a "tar-ball":

http://wikio.nrao.edu/bin/view/Projects/CICADA/CicadaNotes/cicadaNote.tar

containing the files above and an associated LaTeX style file `cicadaNote.sty`. For the latest details, examine `README.cicadaNote`.

3. Distribution

For the present series, the distribution point will be at the NRAO in Green Bank. Requests for help in submitting contributions should be sent to:

```
Ms. Shirley Curry
NRAO, P. O. Box 2
Green Bank, WV 24944
phone:  304/456-2240   fax:  304/456-2170
email:  scurry@nrao.edu
```

No special mailing lists will be maintained, but memos will be available via the Internet. When a new memo is released, the memo index:

http://wikio.nrao.edu/bin/view/CICADA/cicadaNotes

will be updated and the members of the project will be emailed.

The index will include title, author, date, a one-sentence summary (if provided by the author), and some status codes (e.g., we will attempt to flag obsolete memos).

4. Conclusion

We propose to facilitate the CICADA project through documentation based on a freely available notes series. Any concerned person may contribute to this series, so long as the topic relates to

Field Programmable Gate Array development.

The LaTeX template for the CICADA series was based on the CARMA Memo series design. Thanks to Marc Pound and others at the CARMA Observatory.

REFERENCES

L. D'Addario, 1990, NRAO. The OVLBI Memo Number 1.
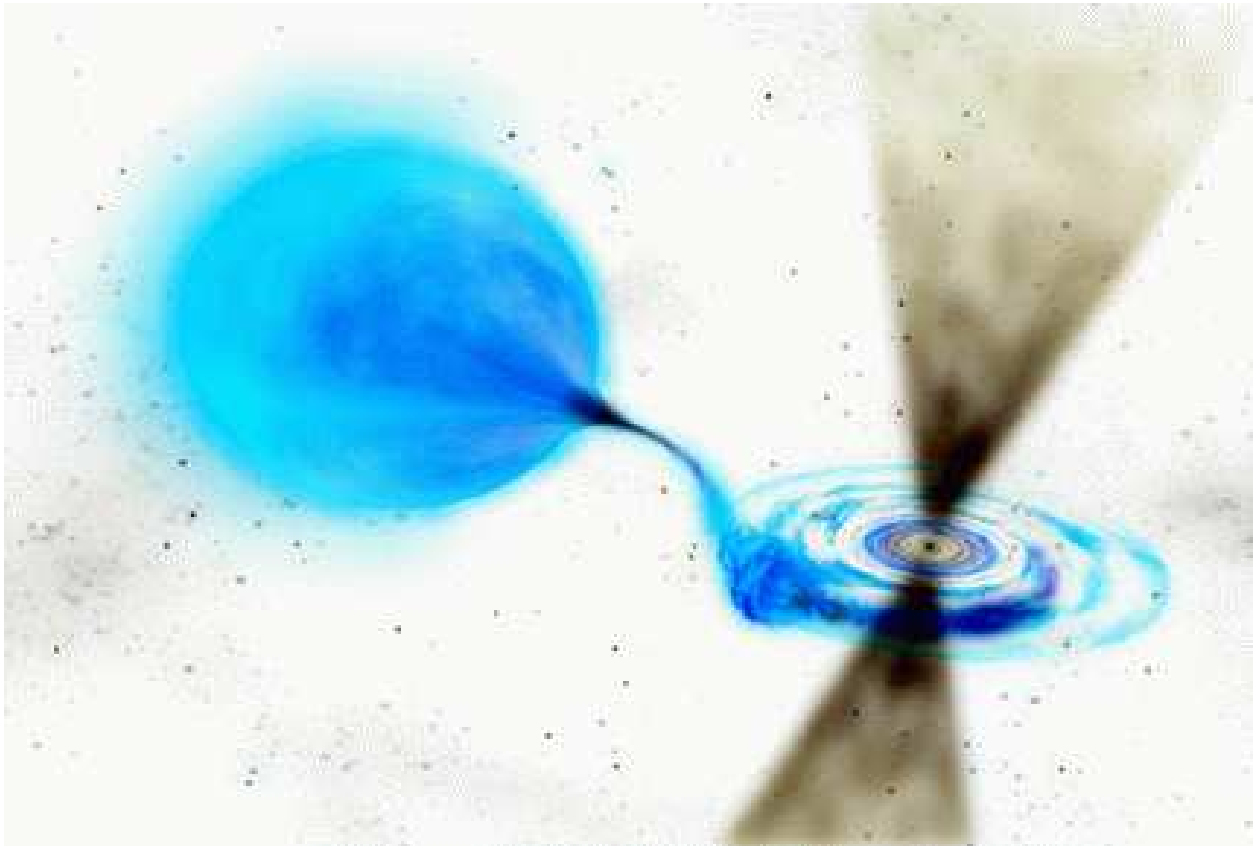
http://www.gb.nrao.edu/ovlbi/memos/es1_memoser.txt

Fig. 1.— This is an example figure. It's the CICADA logo