

# NRAO contribution to ALBiUS

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# Introduction

One of NRAO's possible contribution to ALBiUS is the development of a fringe-fitter in CASA, along with several other interferometric -type endeavors.

The ALBiUS plan has developed without much interaction with NRAO over the last year.

Global Fringe Fitting is a reasonable task for NRAO/CASA

Support that deals with specific CASA development:  
Lead person is Brian Glenndening

Support that deals with general algorithmic development:  
Lead person is Nicole Radziwill

# What is Global Fringe Fitting?

## Antenna-based phase calibration

Given a solution interval

Determine phase, phase rate with time and with frequency

## Type of Observations

Most VLBI and wide-band interferometric systems

Most phase changes are antenna delay changes which scale with frequency

# AIPS Implementation

## Present fringe fitter is in AIPS

It is satisfactory, but could use improvements

## Improvements that would be useful

Detection of weak sources difficult. Need better connection between solution intervals (many coherence times)

Inclusion of multi-band delays (one solution for all spectral windows)

Obtaining accurate SNR's of solutions (also errors)

## NRAO can put no effort into AIPS

# Possible CASA Fringe Fitter

**EVLA and ALMA need a fringe fitter**

Mainly due to wide-band width systems

**VLBI would use of CASA**

More likely if fringe-fitter were available  
egs. JIVE correlator would use it

**ALBiUS support should be sufficient**

## A Possible Plan for NRAO

Collect ideas for fringe-fitting improvement  
(Fomalont in the lead?)

Get a commitment from CASA to do fringe-fitting

If Positive:

1 year: have proto-type ready in CASA for testing  
by all interested groups.

2 years: Final, robust fringe fitter in CASA.