**HEPiX @ Slac, Oct. 26 1993**

# Programming Graphical User Interfaces,

## Status of Nirvana Project.

**Mark Edel ( Paul Lebrun)**

**Fermilab.**

Old Slide !

in collaboration with Joy Kyriakopulos,
K. Iourcha ( PNPI), J. Kallenbach, D. Reid.

**Outline :**

1. Overview of goals of GUI's

2. Implementation difficulties.

3. Strategies

Old Slide !

4. Status and plans.

*Note : Deep technical questions ought to be addressed to Mark..*

**HEPiX @ Fermilab , Oct. 14 1994**

# Programming Graphical User Interfaces,

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**Outline :**

1. ~~Overview of goals of GUI's~~ → **Why bother ??? What's new ?**
2. ~~Implementation difficulties.~~ → **We have a lot to do, now that we know how to do it !**
3. Strategies
4. ~~Status and~~ plans.

# Why Bother ?

**( We already gave that talk ..!)**

**[ The "Nirvana" project aims at delivering high quality GUI to HEP packages and tools ...**

**Technology : C, Motif,** ( OO style when and if appropriate)

**Packages : Nedit, Histo–Scope, StdHep Phase display...]**

**––> We are (still) around, and we want to do more !**

But, after all, we haven't been around for that long...

Compare to successful HEP packages ( eg. HBOOK, MINUIT..)
this software is pretty new..

but, ( we hope, and feel), as reliable as (or more !) the old one.

unfortunately, our tool box is incomplete !

Despite of some missing pieces, one of us (P.L.) is very happy
not to deal with F77–based "basic tools"
( e.g., histogramming, event i/o...)

**––> So, many of us are willing to move forward..**
**(Note : Motif is now many years old !)**

**–––>Do we have, as members of the HEP community,**
**the will and the resources to take advantage of new technologies ?**
**the strength to reinvent ourself ?**

**Of course, we do ...**

**But please, do it in the old framework..**
**don't reinvent the wheel..**
**Keep supporting the old stuff, it served us well...**

**Let us keep our sacred cows**
**( sorry, the African mammal,..)**

**Sorry for being polemical, but these things needs to be discussed,**

**As our project is entering a new phase ( may be...)**

**But first, let us review what happen this year...**

## New Versions of Nedit & Histo–scope

**Nedit : Using now the capabilities of Motif 1.2**
**Available on ~ 11 platforms...**
**~ >~ 1,000 users (mostly non HEP users...)**

**But usage starts spreading,**
**even in our own group here at Fermilab.**

**Available in Fermi tools.**

**Histo–Scope : New feature of v3.0**

–> A complete Application Interface to our Histograms.
(Yes, we rewrote HBOOK... (mostly)..)
fixing some basic HBOOK deficiencies..

–> New widget ( The Pseudo Scatter plot = Cell plot)
–> Encapsulated Postscript
–> minor Improvement to existing ones
–> Fixed HBOOK interface... Now compatible with V94a
–> Support for HBOOK circular Ntuples.
–> Inline commands...

Demos...

**Histo–Scope v3.1 , (coming up):**

A configuration file to save the previous work...

More platforms : VxWork, HP–Unix,.. OSF (that one is done, sorry), ,...

Shared memory histogramming : targeted for the SGI Challenge series.

**Usage @ Fermilab :**

(beside me !)..

Mostly, Fixed target and Online peoples.
A small Collider Experiment is using it as well.

but we have been "ordered" to do demos @ CDF and D0.

More suggestions welcome !

**What we did not finished (yet) is Nfit :**
**A GUI interface between Minuit and HBOOK or Histo 1D – 2D histograms...**

.....

**As I said, still plenty to write !**

**NDraw ... Histo–Analysis ...**

**––> Graphical Analysis package.**

**Procedural language must be used..**

**Use of exiting language certainly welcome..**

**but a Iconic language might be much better..**

**Also to be discussed : Data model, structures,..**

**In good cooperation with existing Scientific Visualization packages.**
**(e.g. SGI Explorer..)**

**We have no plan to keep writing Event Display software..**

But GL ( Open GL) is required !
May be we will have to write an XRender module, after all...

# Tools & languages..

**We started with C and Motif..**

**And this is no longer R&D !**

Motif 1.2 stable and fairy robust..
Deployed "everywhere" (assuming UNIX is the universe...)

**And we should keep using these tools, they are not yet obsolete ..**

**But Tk−Tcl is now mature enough and easier then Motif..**

Will be used in the Online environment at Fermilab.
A few physicists are writing the GUI to their analysis package using TkTCL..

**Also C++ is about to become a real standard..**

**What we should not do ..**

**Provide "absolute backward compatibility" with old tools..**

**E.G. : There is no strict 1/1 correspondence between**
**Histo–Scope & HBOOK call to manipulate histograms.**
**HBOOK has large "Disk–based" Ntuple,**
**"Column wise" organization, you must have it !**

**Keep old software,**
**because that's thousands of (cherished) lines of code.**

**By the way, who are we ?**

**Open to discussion...**