GSI
Online
Offline
Object
Oriented

New features
Analysis structure
New examples
Brief demo

Go4 v2.8 Status & Overview

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Workshop 2004

New features of Go4 v2.8 (best of)

- **Channel and window markers**

- **ROOT graphical editor support**

- **View panel title**

- **Polygon condition calculates statistics**

- **Histogram rebinning, projections, profiles**

- **Histogram client: drag&drop, auto-update**

- **Full use of UserObject folder**

- **Print fit results**

New features of Go4 v2.7 (best of)

- **Key short cuts**

- **"Type" event**

- **Multiple files in disk browser**

- **Performance**

New features of Go4 v2.6 (best of)

- Hot start

- Export histograms (text, radware)

- Auto-save performance

- Standard TGo4Analysis and TGo4StepFactory

- Canvas support

- Editors for objects in ROOT file

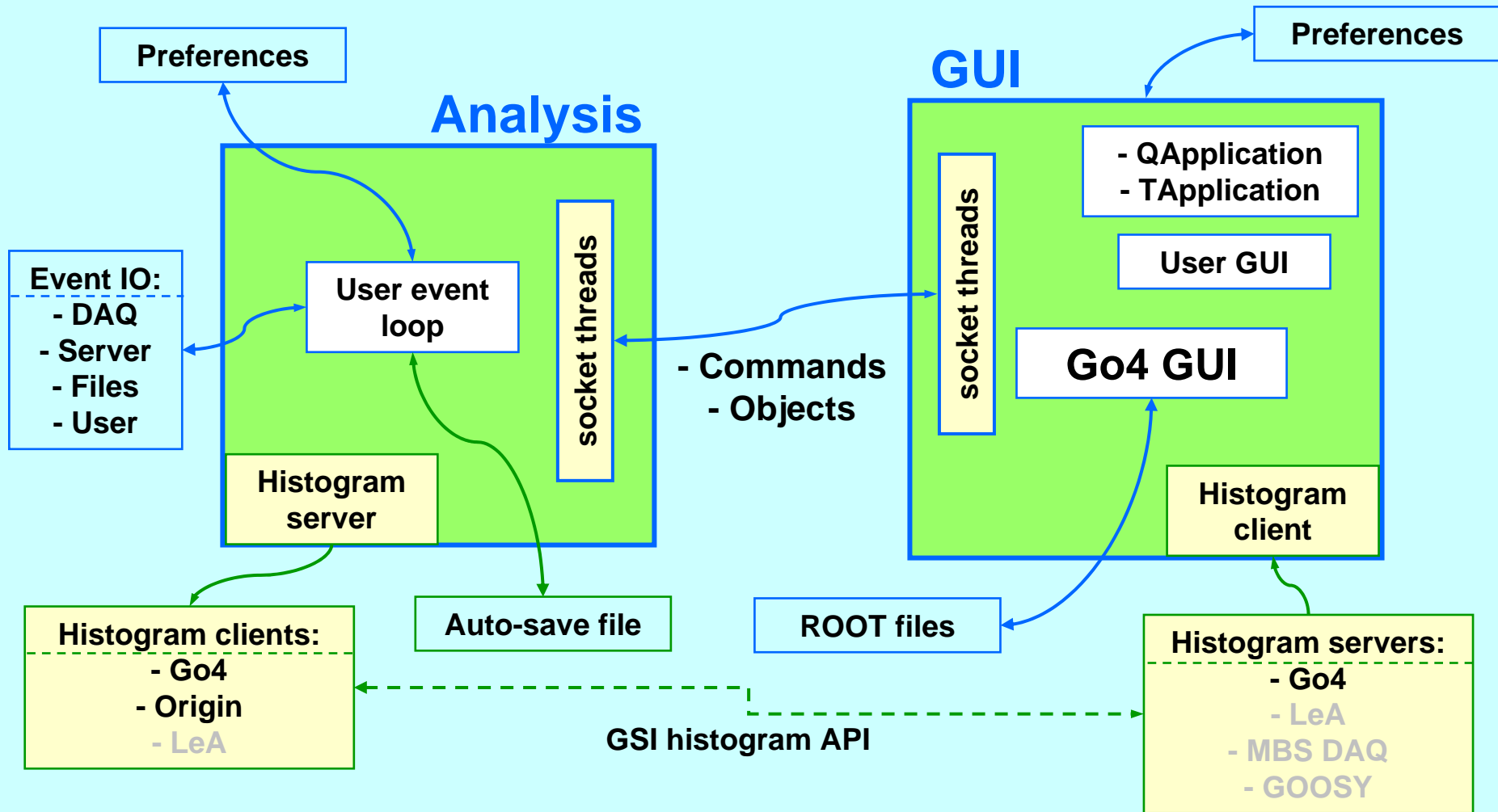- Multiple auto-save files for multiple input files

New features of Go4 v2.5 (best of)

- **Histograms bound to conditions**

- **Conditions in pictures**

- **Condition editor improvements**

- **Monitoring TGraph, picture, THStack**

- **Log file**

- **GetBufferHeader (in event processors)**

- **TGo4Analysis::NextMatchingObject("*") (macros)**

- **TGo4Analysis::Store... writes objects into event store.**
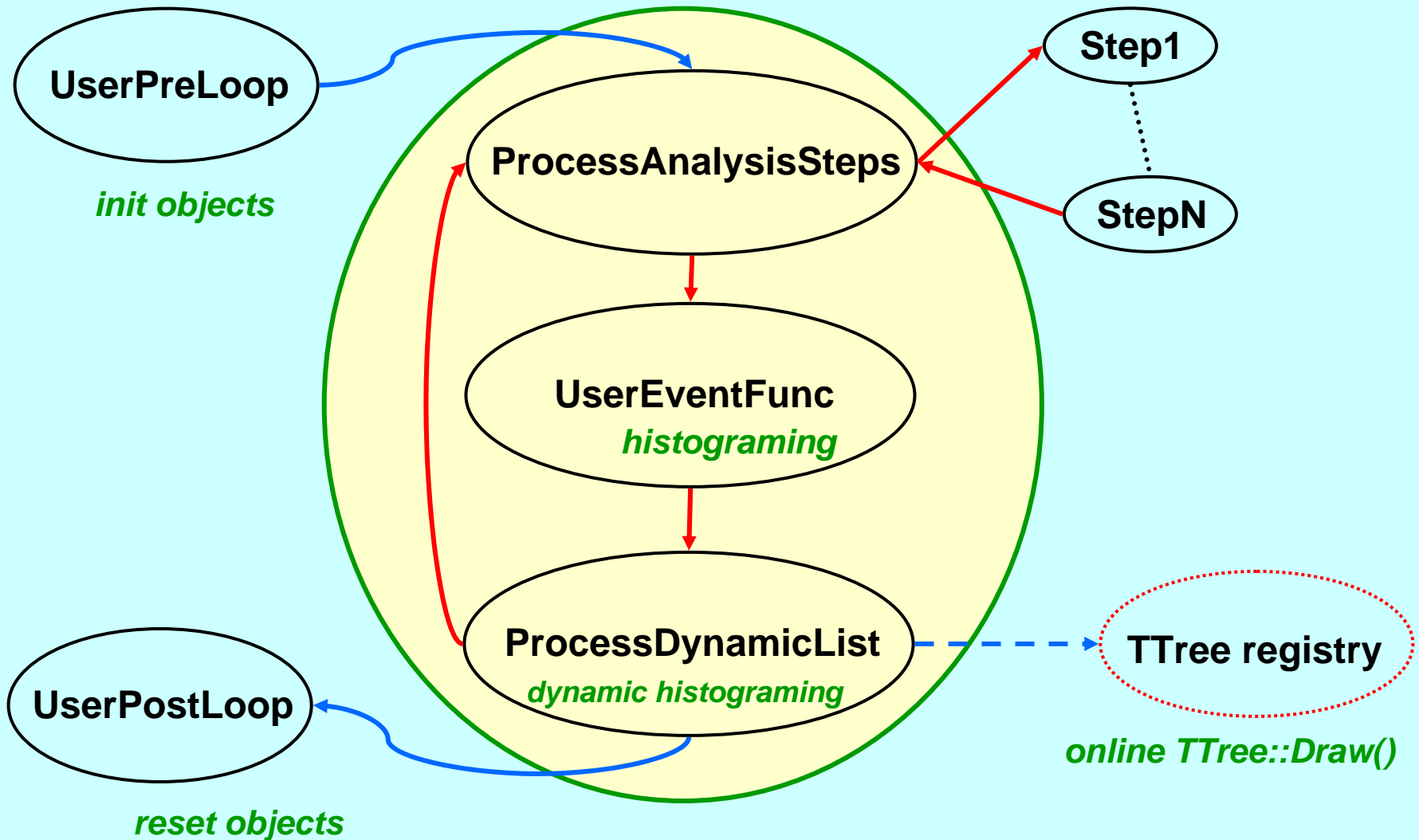 **(parameters, conditions, fitters, folders)**
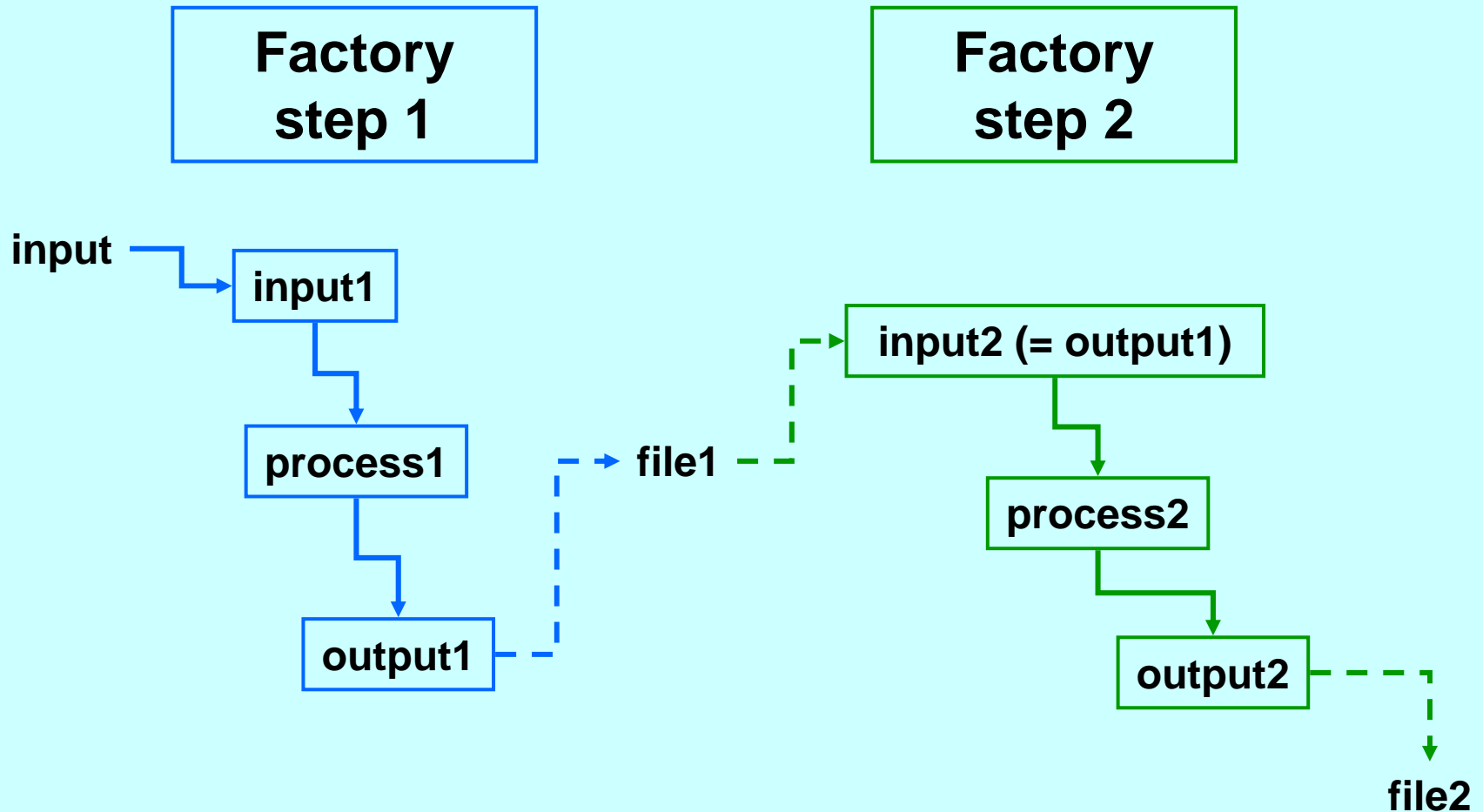
- **Non serial analysis steps**
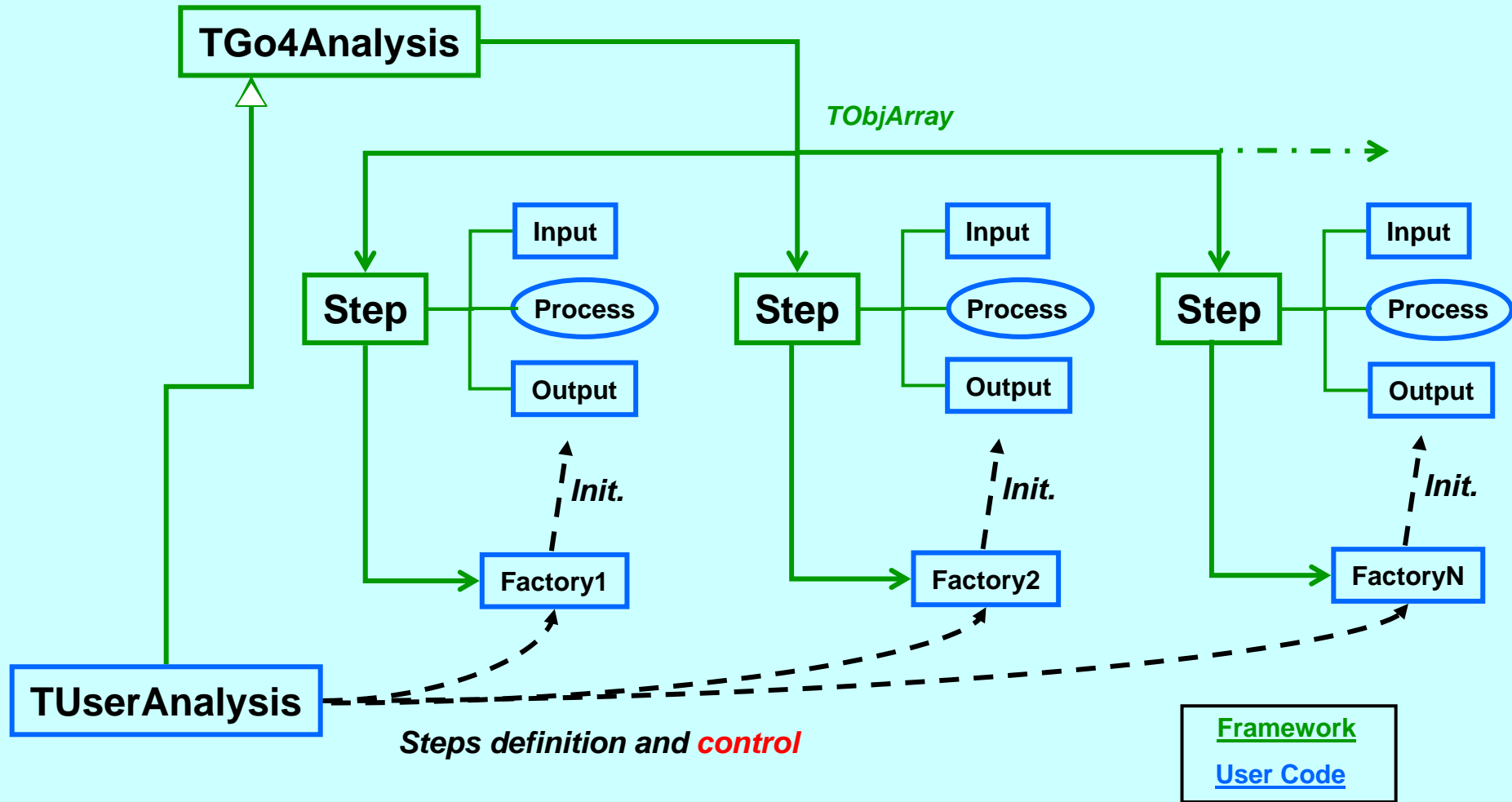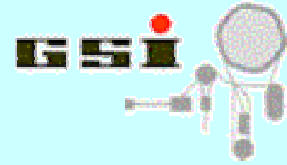
Go4 tasks: GUI & analysis

Analysis event loop

UserPreLoop

init objects

ProcessAnalysisSteps

Step1

StepN

UserEventFunc

histograming

ProcessDynamicList

dynamic histograming

TTree registry

online TTree::Draw()

UserPostLoop

reset objects

Analysis steps (event loop)

Factory step 1

Factory step 2

input → input1 → process1 → output1 - - → file1 - - → input2 (= output1) → process2 → output2 - - → file2

Analysis steps (objects)

TGo4Analysis

TObjArray

Step — Input / Process / Output

Step — Input / Process / Output

Step — Input / Process / Output

Init.

Factory1   Factory2   FactoryN

TUserAnalysis

Steps definition and control
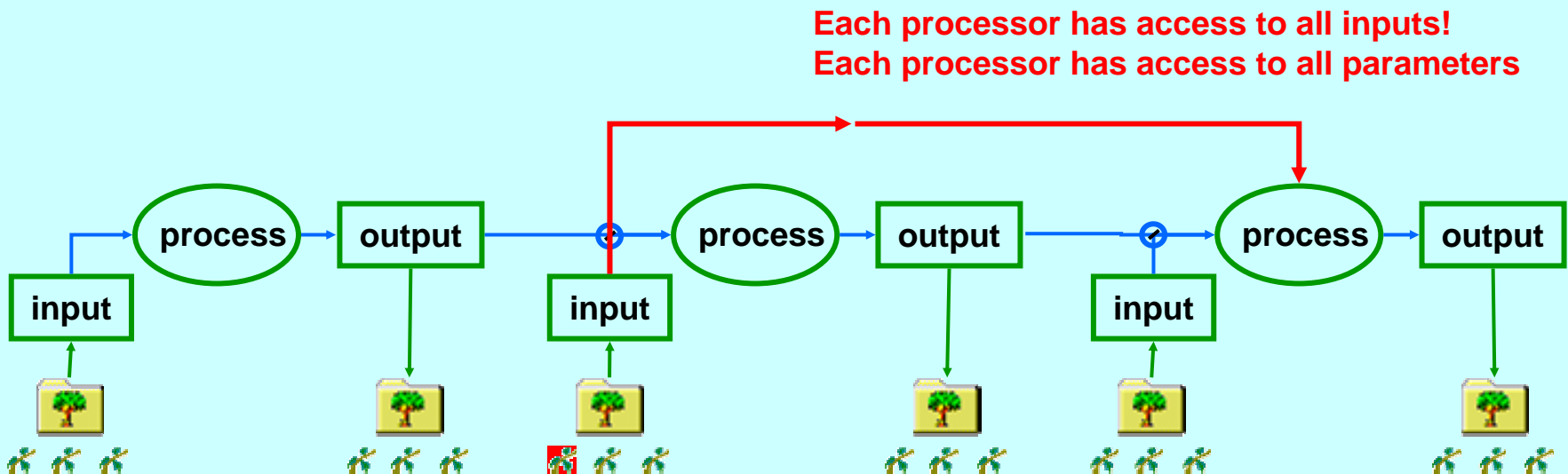
Framework

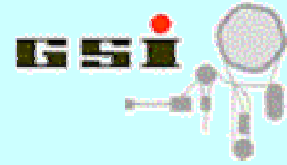**User Code**

Analysis steps (sequential)

Chain of analysis steps processed sequentially
Each step can be en/disabled (framework)
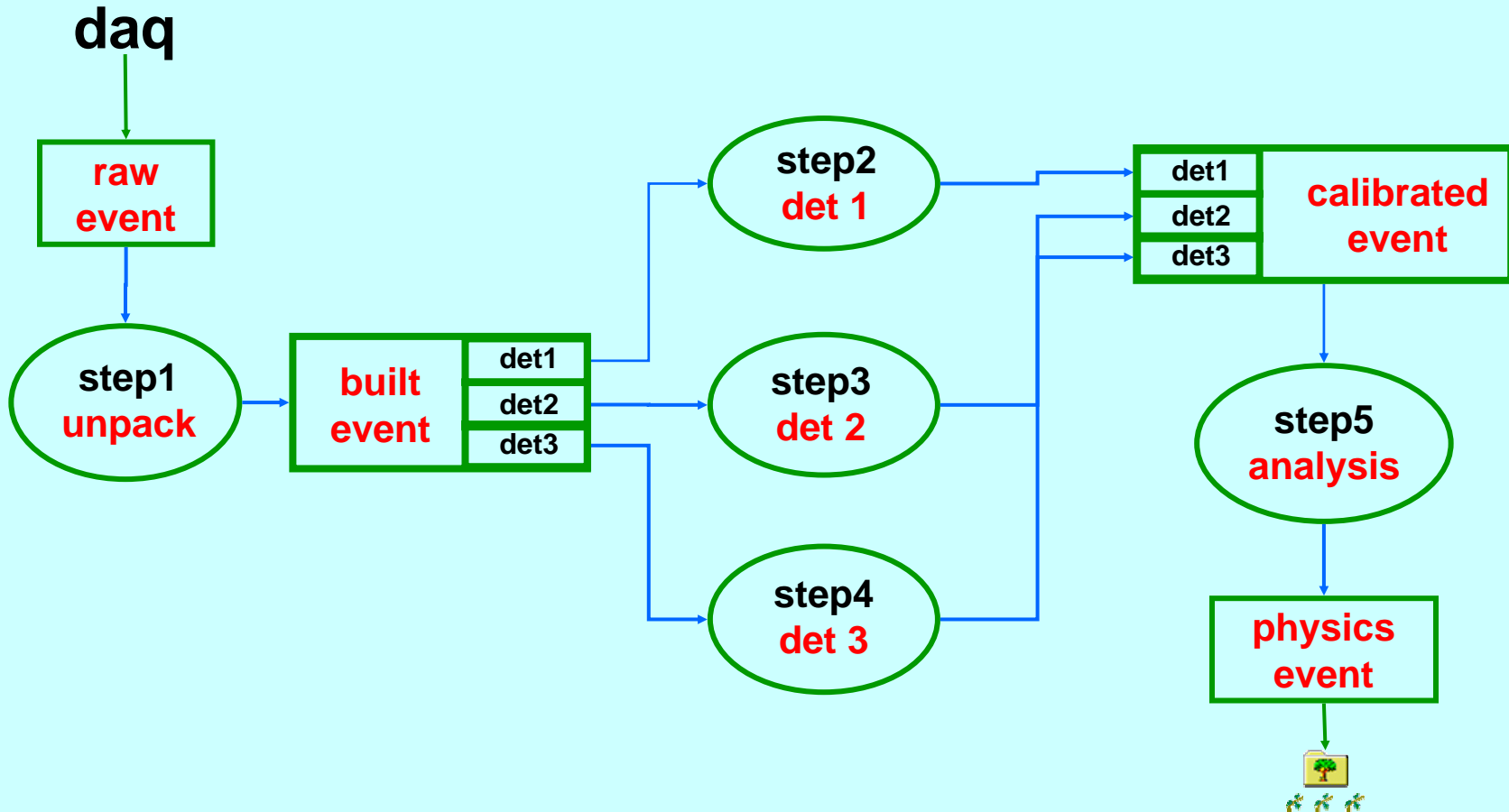**Input/output can be switched (framework)**
Partial IO (steered by application)

Each processor has access to all inputs!
Each processor has access to all parameters

Analysis steps (concurrent)

daq

raw
event

step1
unpack

built
event
| det1 |
| det2 |
| det3 |

step2
det 1

step3
det 2

step4
det 3

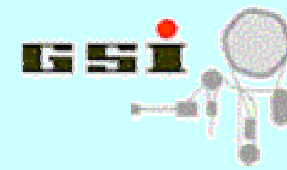| det1 |
| det2 |
| det3 |
calibrated
event

step5
analysis

physics
event

New examples of Go4 analysis

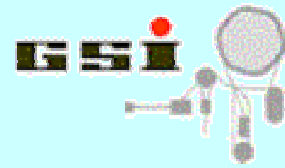- **Go4ExampleSimple**

- **Go4Example1Step**

- **Go4Example2Step**

Simple example

- **New Main program (batch: support all GSI event sources)**

- **One step**

- **TXXXEvent.cxx/-.h dummy output event (no data, not filled, no output)**

- **Standard analysis TGo4Analysis**

- **Standard step factory TGo4StepFactory**

- **Select input source via macros, e.g. revserv.C**

- **Set up step by macro setup.C (modify without remake)**

- **Complete analysis in TXXXPROC.cxx/-.h**

- **Auto-save in batch only**

- **Histograms His1,2 bound to window conditions cHis1,2**

- **Conditions cHis1,2 added to picture condSet (pads of His1,2)**

1 step example

- **New Main program (batch: support all GSI event sources)**

- **One step**

- **TXXXEvent.cxx/-.h output event (filled, output en/disabled by macro)**

- **User analysis TXXXAnalysis**
  (UserPreLoop, UserEventFunc, UserPostLoop)

- **Standard step factory TGo4StepFactory**

- **Use macro setfill.C to set parameters for steering the analysis**

- **Complete analysis in TXXXPROC.cxx/-.h and TXXXEvent.cxx/-.h**

- **Auto-save in batch only**

- **Macro go4savecond.C creates macro
  to set all conditions to actual values (i.e. after next startup)**

2 step example

- **New Main program (batch: support all GSI event sources)**

- **Two steps: unpack and analyze**

- **User analysis TXXXAnalysis**
  (UserPreLoop, UserEventFunc, UserPostLoop)

- **User step factories**

- **CINT macros to extract histograms from an auto-save file**
  (convert.C, convertfile.C)

Demo

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Go4 v2.8 free download
http://go4.gsi.de

tested with
Debian 3.0, RedHat 8.0, Fedora, Suse 9.1
gcc 2.95-x, gcc 2.96-x, gcc 3.2, icc 7.0

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