

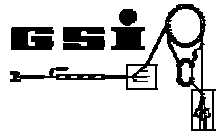


GSI  
Online  
Offline  
Object  
Oriented

# The Go4 eventloop framework: analysis steps

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ROOT 2002



# Contents

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- **Event base classes**
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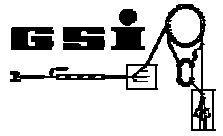


# Go4 Framework Concepts

- Based on **standard ROOT** system
- **Online** and **Offline** Framework
- **Batch mode** and **interactive mode** ( GUI)  
may run same analysis
- **Any user analysis** may be adopted

**Go4** provides **interfaces** (base classes) to  
„plug-in“ user event classes and analysis

**Go4** implements all **general services**



# Event Base Classes

- **TGo4EventElement:**  
Event structure (input and output event)
- **TGo4EventSource:**  
Fills event structure with data
- **TGo4EventStore:**  
Stores event structure
- **TGo4EventProcessor:**  
Converts input event into output event;  
subclass of TGo4EventSource
- **TGo4EventFactory:**  
Defines the user implementations of all  
the above at initialization



# Implemented Services

- GSI standard DAQ (**Mbs**)
- Complex event structures „toolbox“:  
**TGo4CompositeEvent**, ... < see Denis Bertini's talk
- **Root I/O** :
  - **TGo4FileSource**, **TGo4FileStore** :  
wraps **1 TTree** in **1 TFile**
  - **TGo4BackStore** :  
**1 TTree** in memory only ( <- **online TTree::Draw()** )
  - both can handle **TGo4CompositeEvent**



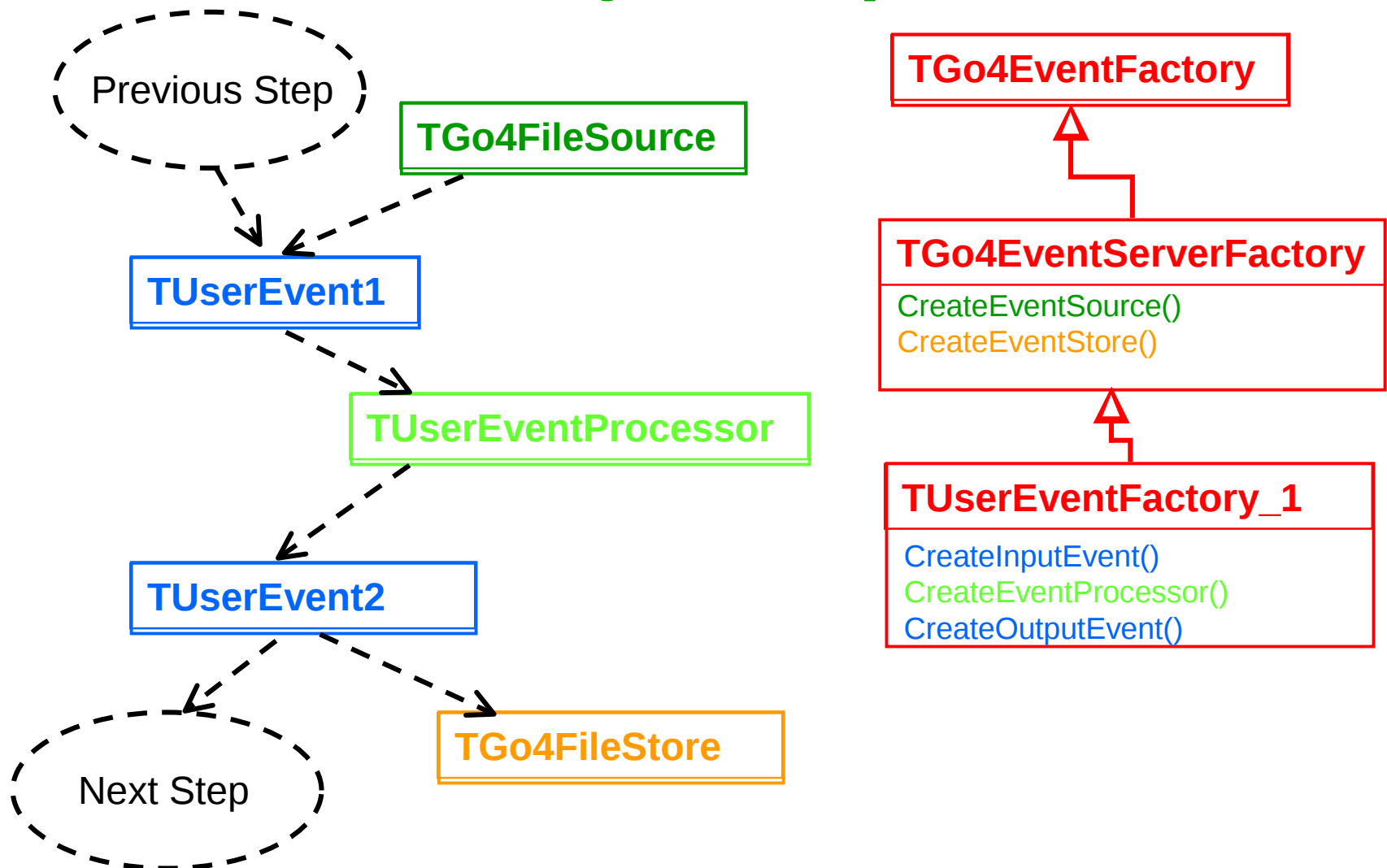
# Analysis Framework

- **TGo4Analysis** baseclass:
  - Analysis setup (chain of analysis steps)
  - Object organization, dynamic histograms
  - Implicit / explicit event loop
  - Virtual methods to be defined  
in **user analysis subclass**
- **TGo4AnalysisStep**:
  - defines one stage of the analysis,  
implements event classes

**User designs own subclass of TGo4Analysis**

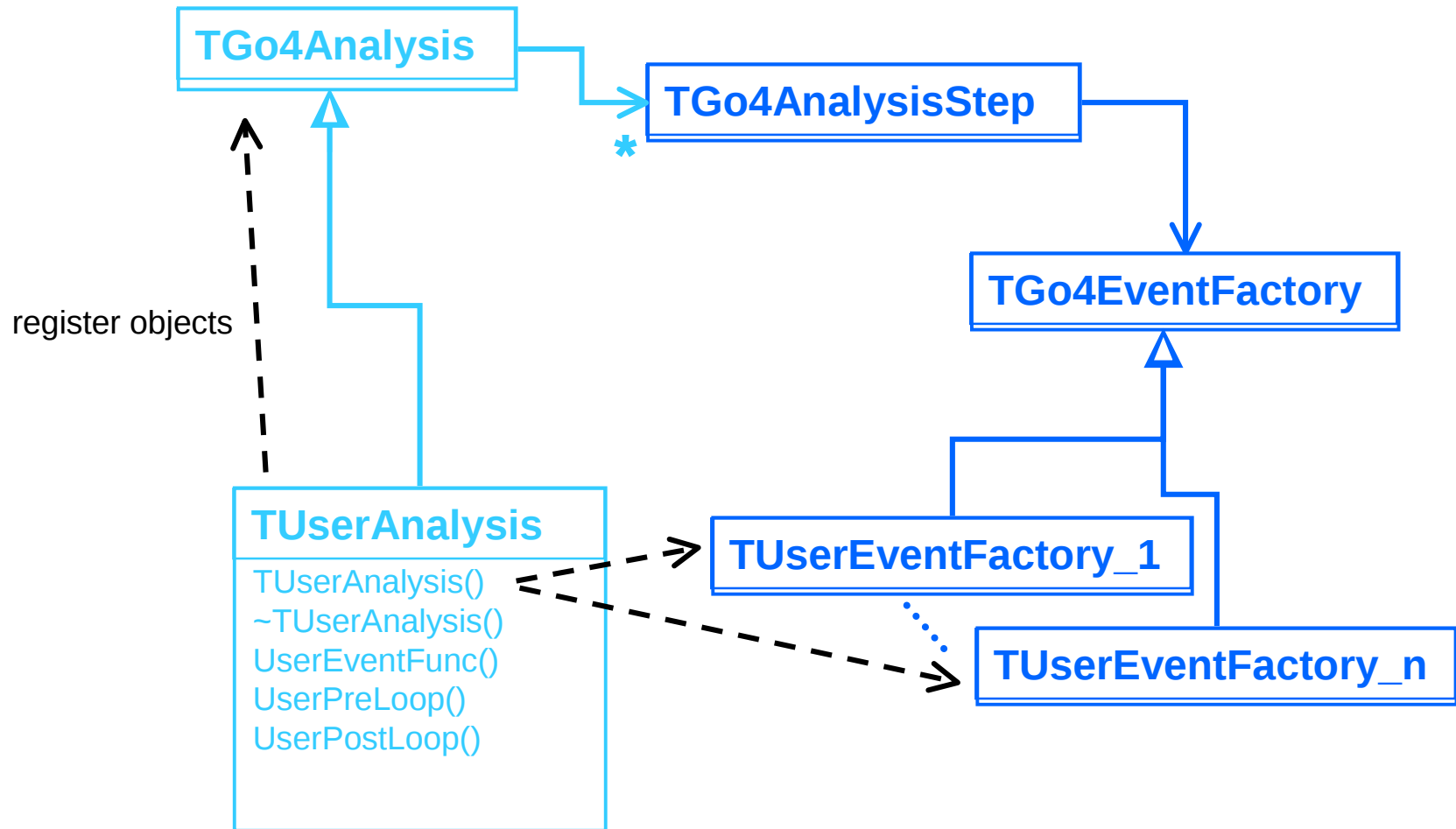


# Analysis Step



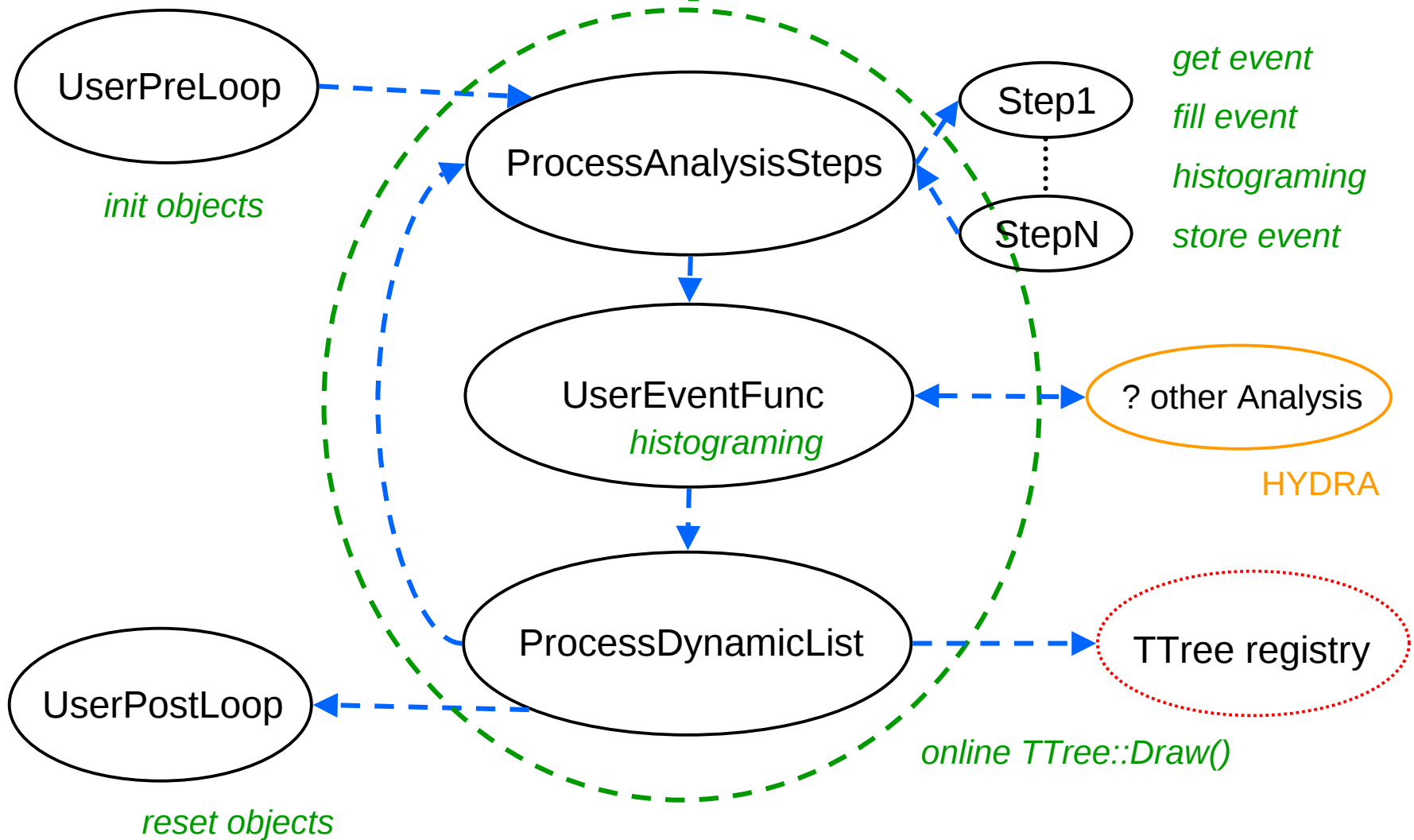


# Analysis Framework



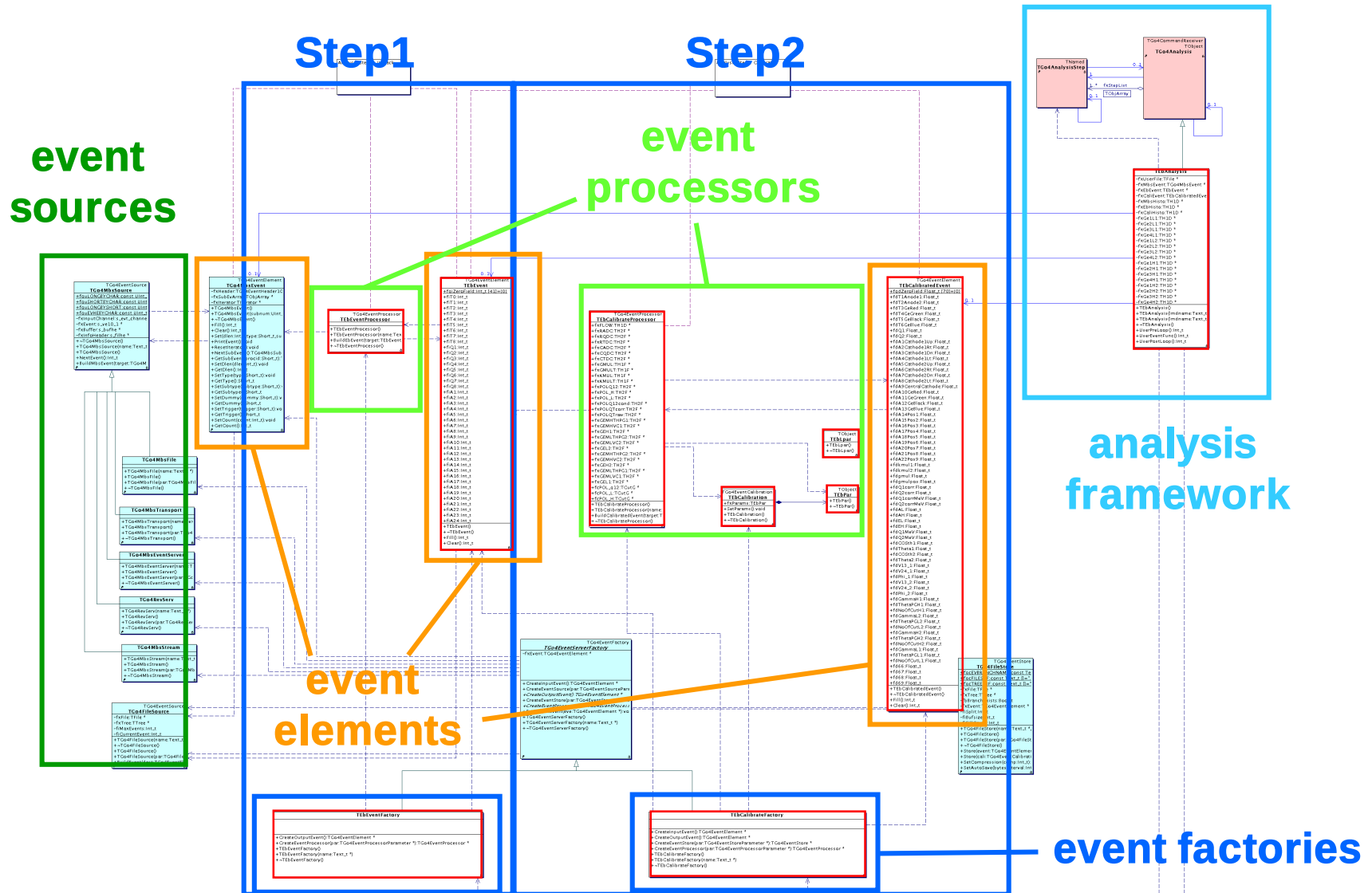


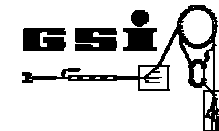
# Eventloop Actions



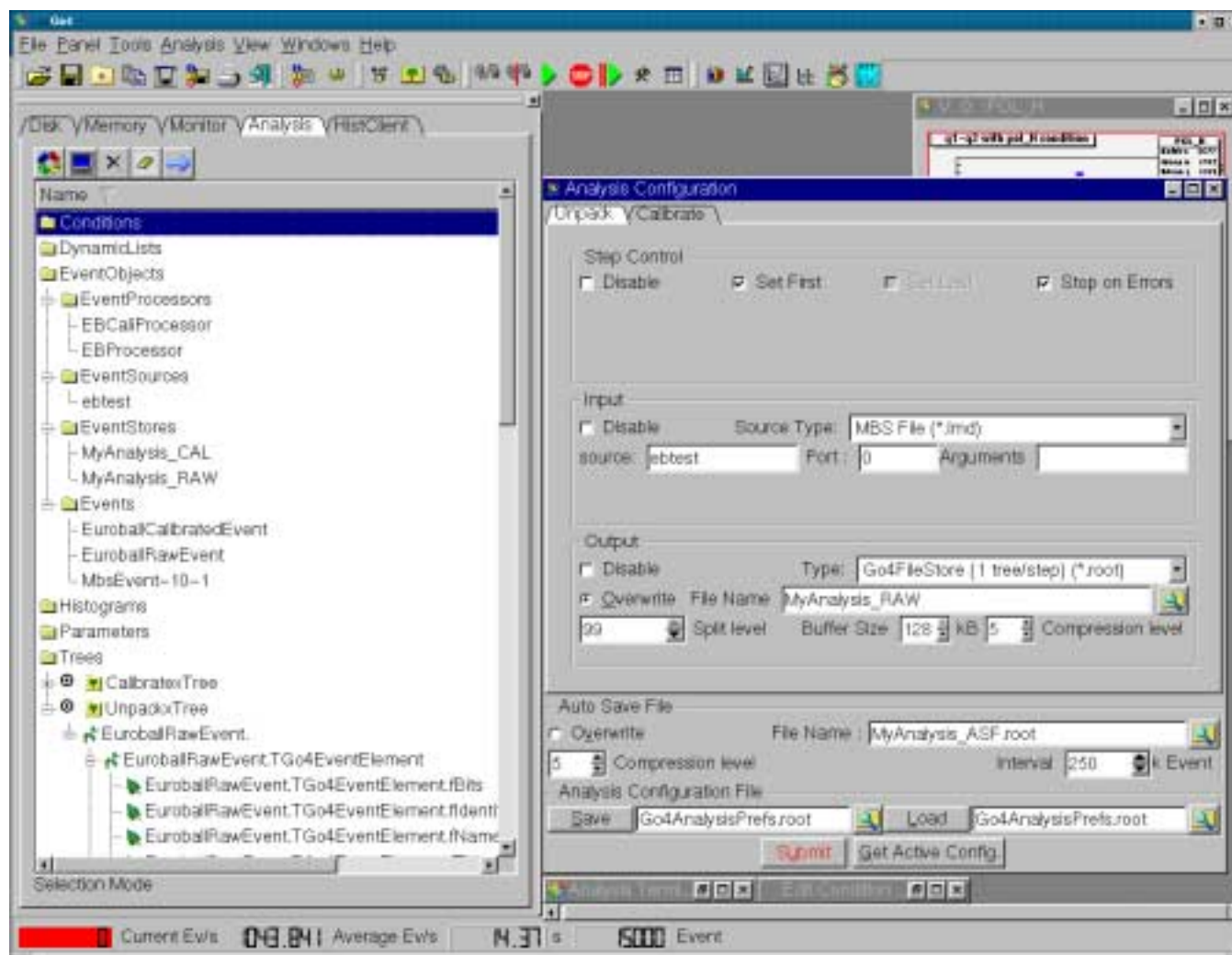


# Example Analysis: Euroball



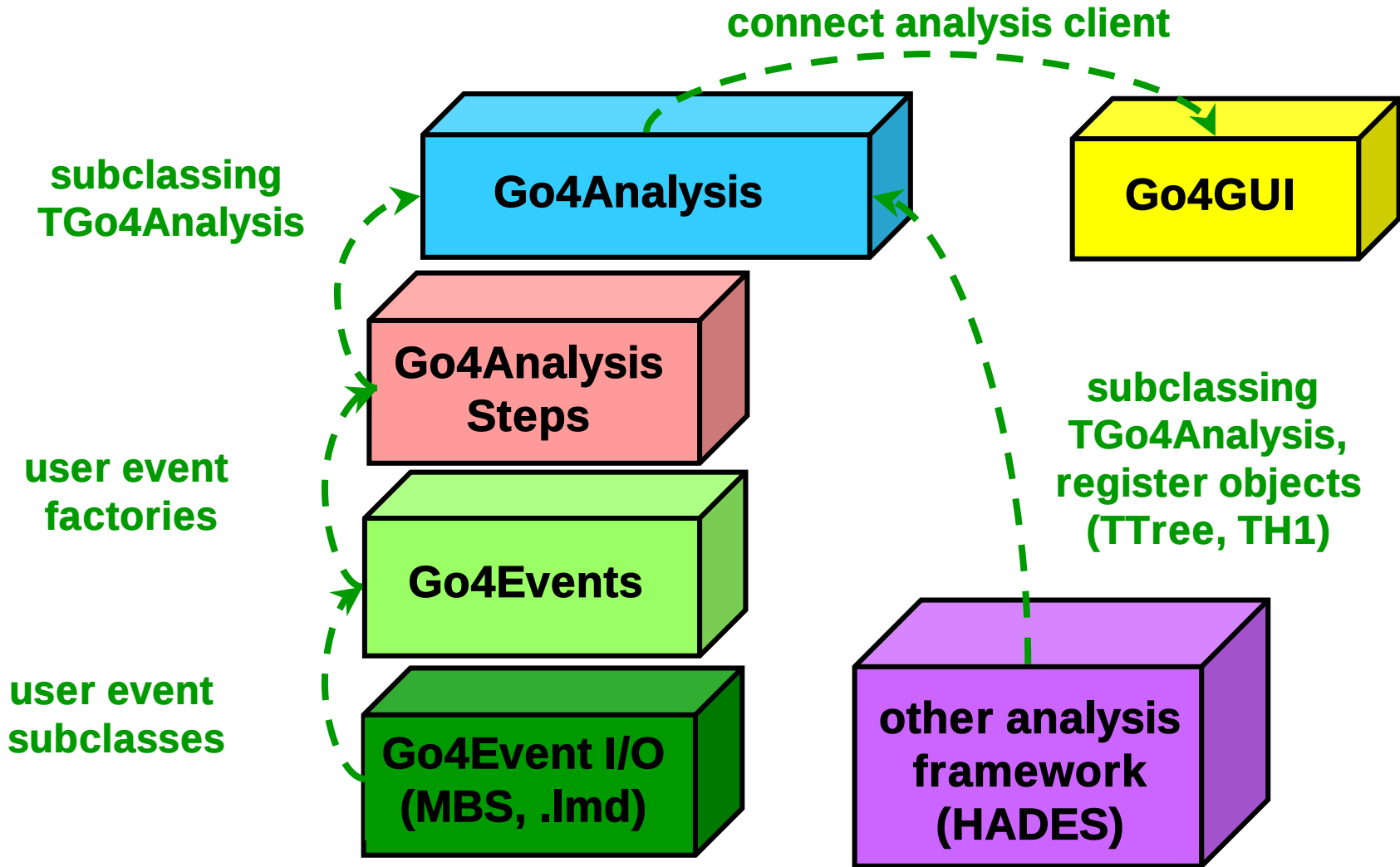


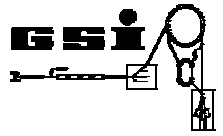
# Analysis Setup Control





# Using Go4 Components





# Summary

- **Go4** Analysis framework is **flexible**
- **Event base classes** define interface
- **Framework** services + **user** subclasses
- **Analysis steps:** common set up (gui control)
- uses **Root** data management / object streamer
- **Go4** Version 2.0 ready