Go4 Gui

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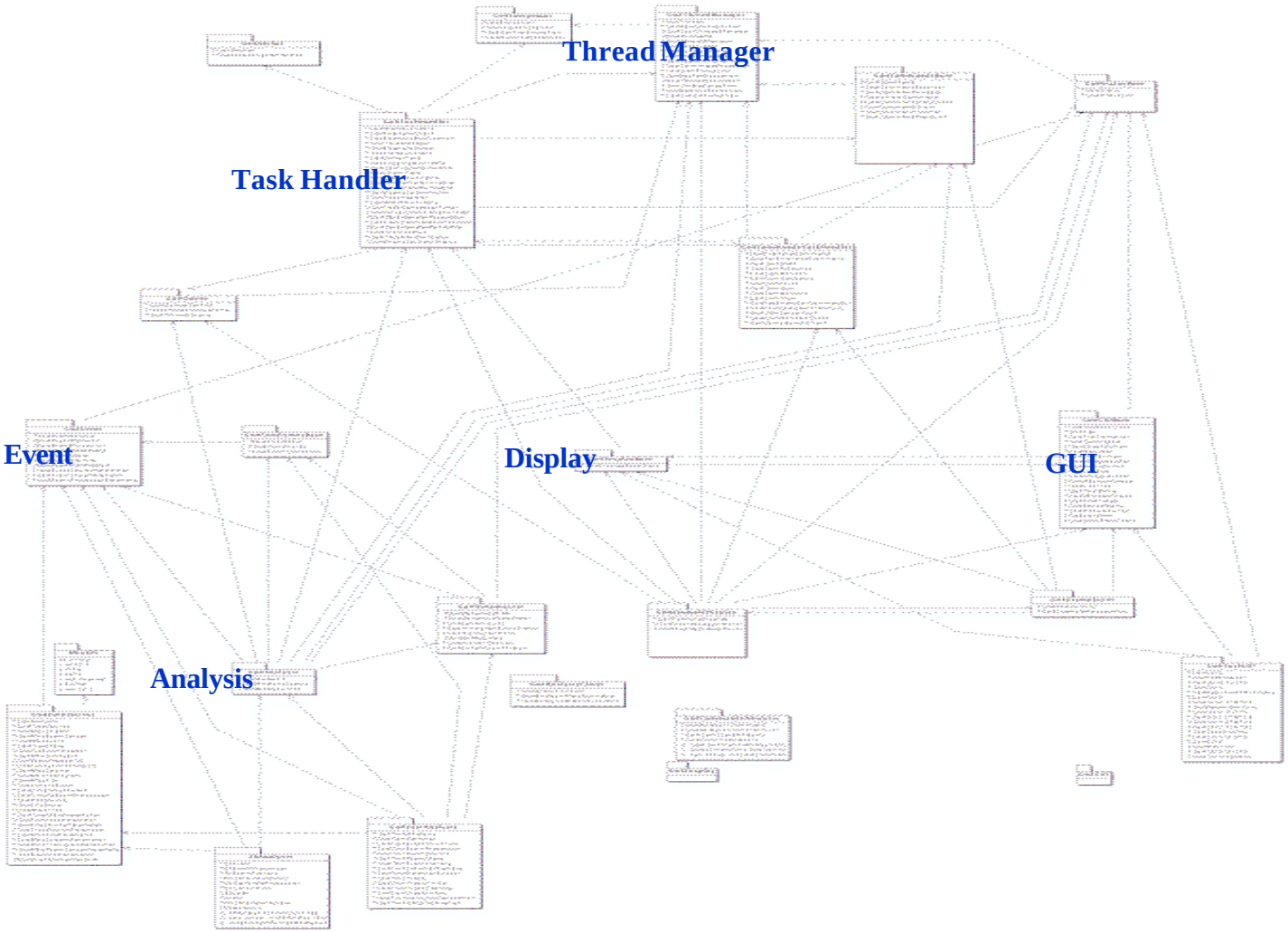
Go4 Project

GSI object-oriented online-offline system

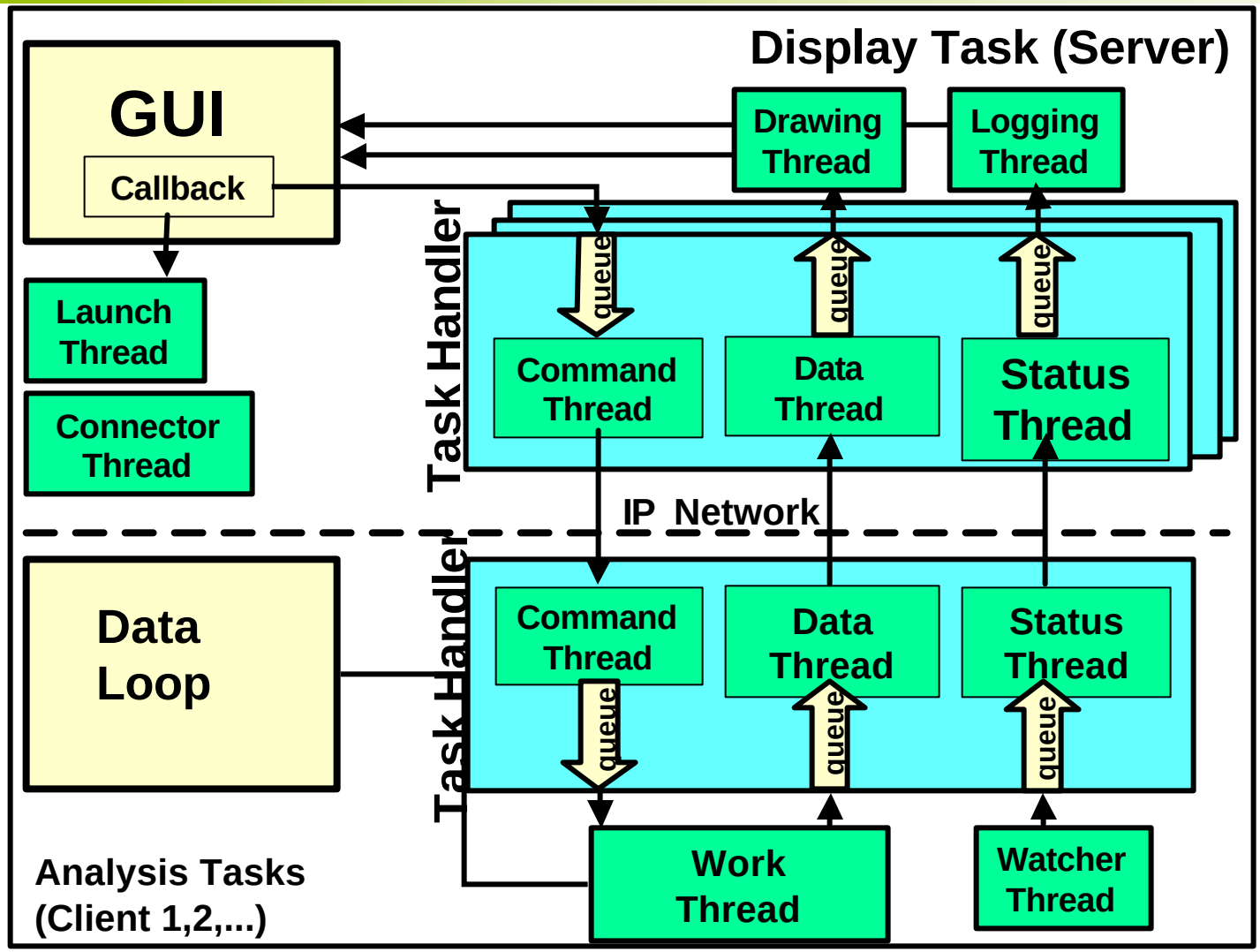
Go4 Requirements

- GSI: Heavy Ion and Atomic Physics
- various (~40) DAQ systems installed
- small to medium sized experiments
- on-line analysis required (Non-Blocking GUI)
- GUI shall control running analysis
  - » Tasks and Threads
- selected ROOT as framework

Go4 package Overview



Functional overview of the Go4



Go4 features

- **Analysis and GUI in separate tasks**
- **Multi-threading**
- **Communication through socket threads**
- **Object streaming by ROOT**
- **Use of ROOT native GUIs as well as Qt GUIs**

First Experiance with GUI
Go4 Viewer

Features:

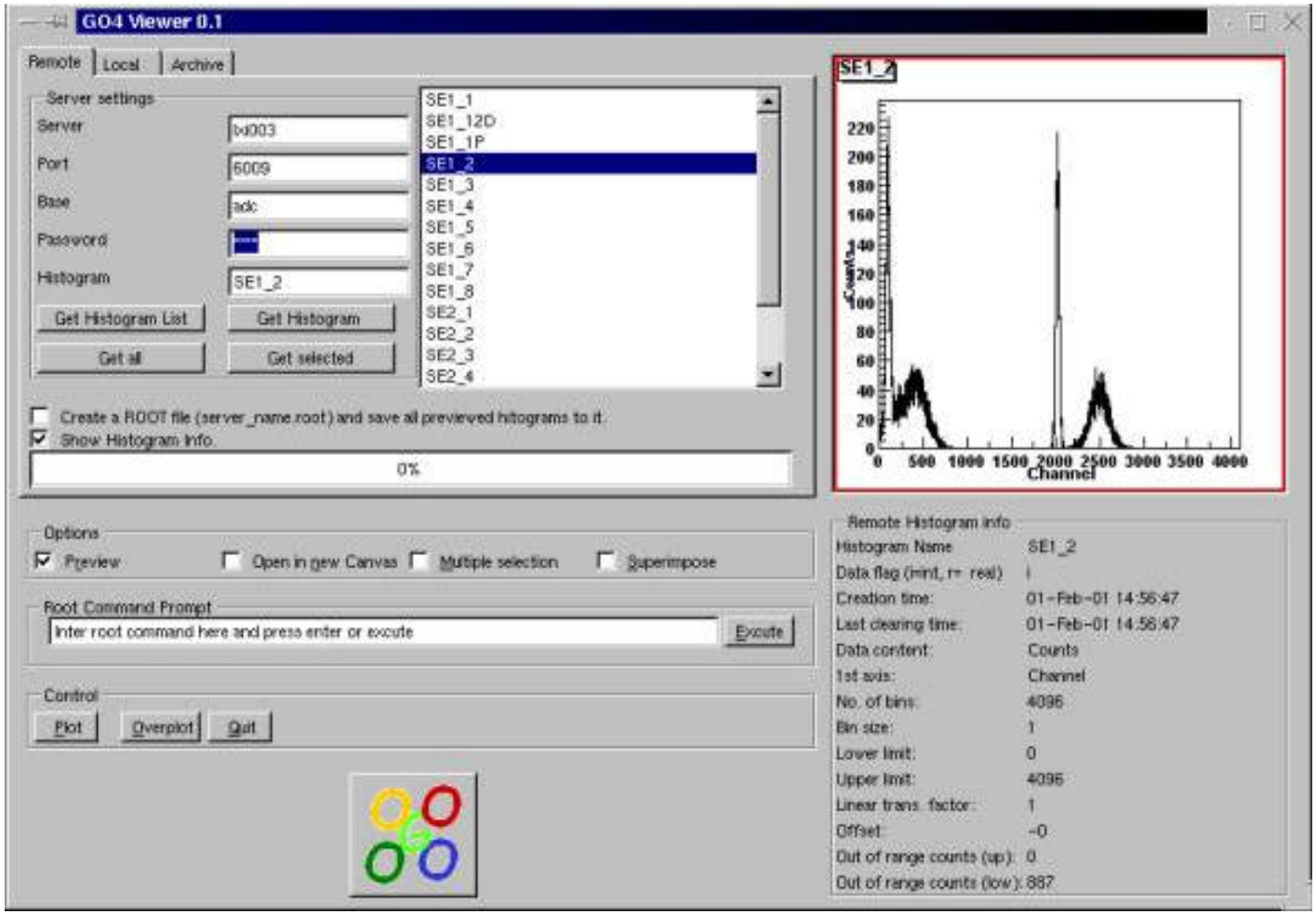
1. Remote:
   - Histogram API client for LEA, GOOSY and MBS servers at the GSI
   - Auto preview of histograms header data
   - Histograms can be directly imported into ROOT

2. Local:
   - Full functional file browser
   - Direct conversion of Ntuple and Hbook files to ROOT files

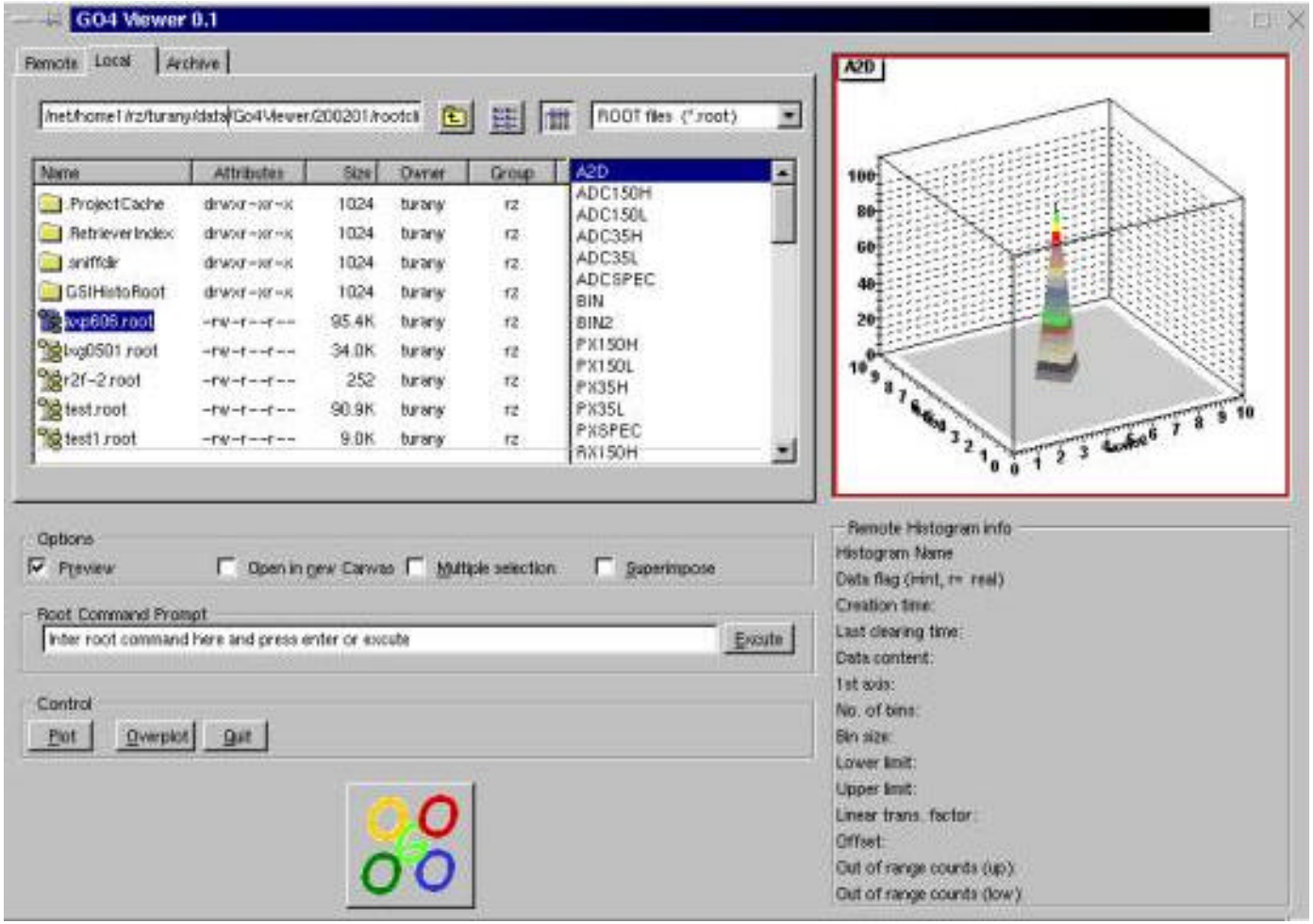
3. Archive:
   - API client for mass storage at the GSI

http://www-aix.gsi.de/~turany/Go4Viewer.htm

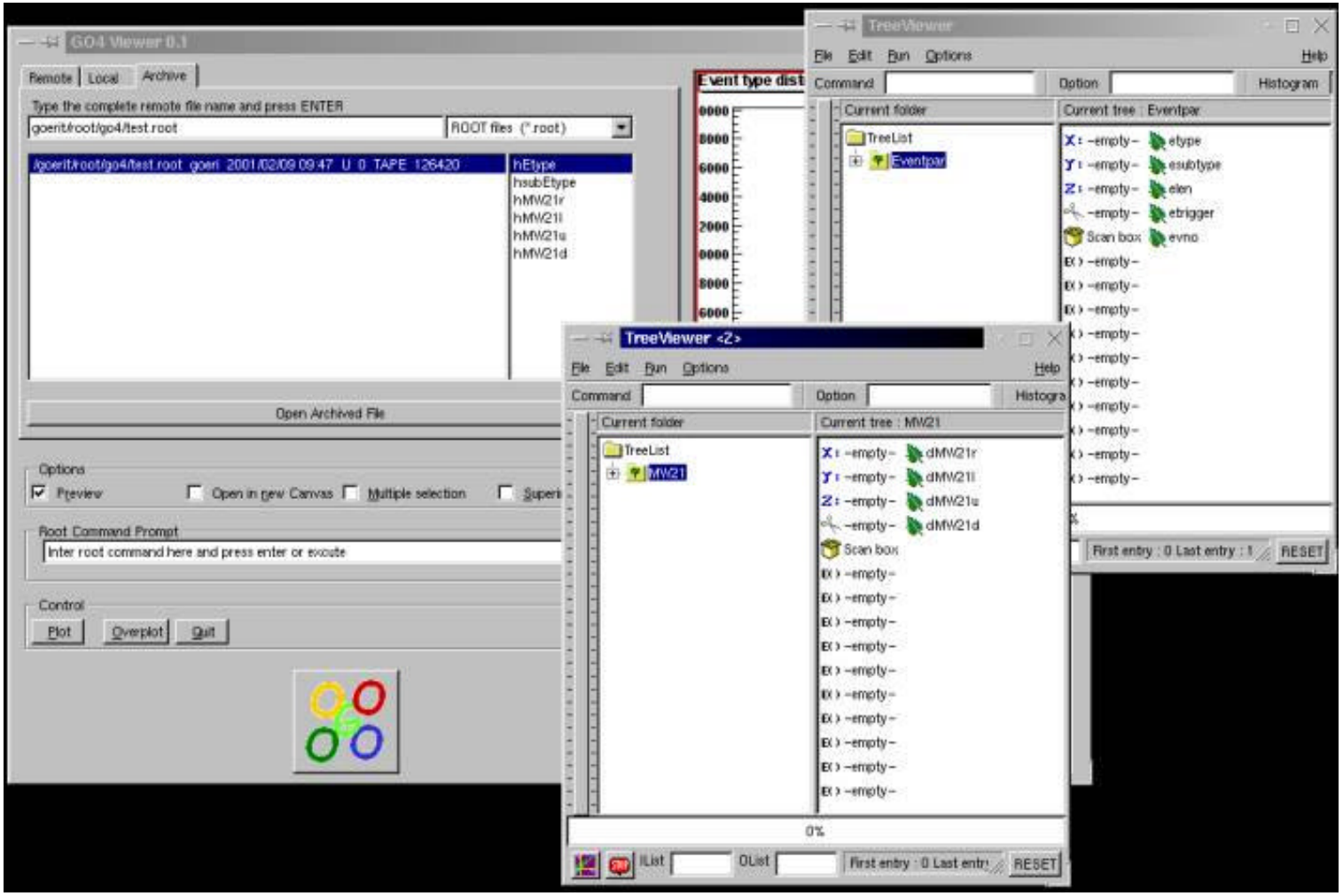
First Experiance with GUI Go4 Viewer (Remote)



First Experiance with GUI Go4 Viewer (Local)



First Experiance with GUI Go4 Viewer (Archive)



Go4 GUI Requirements

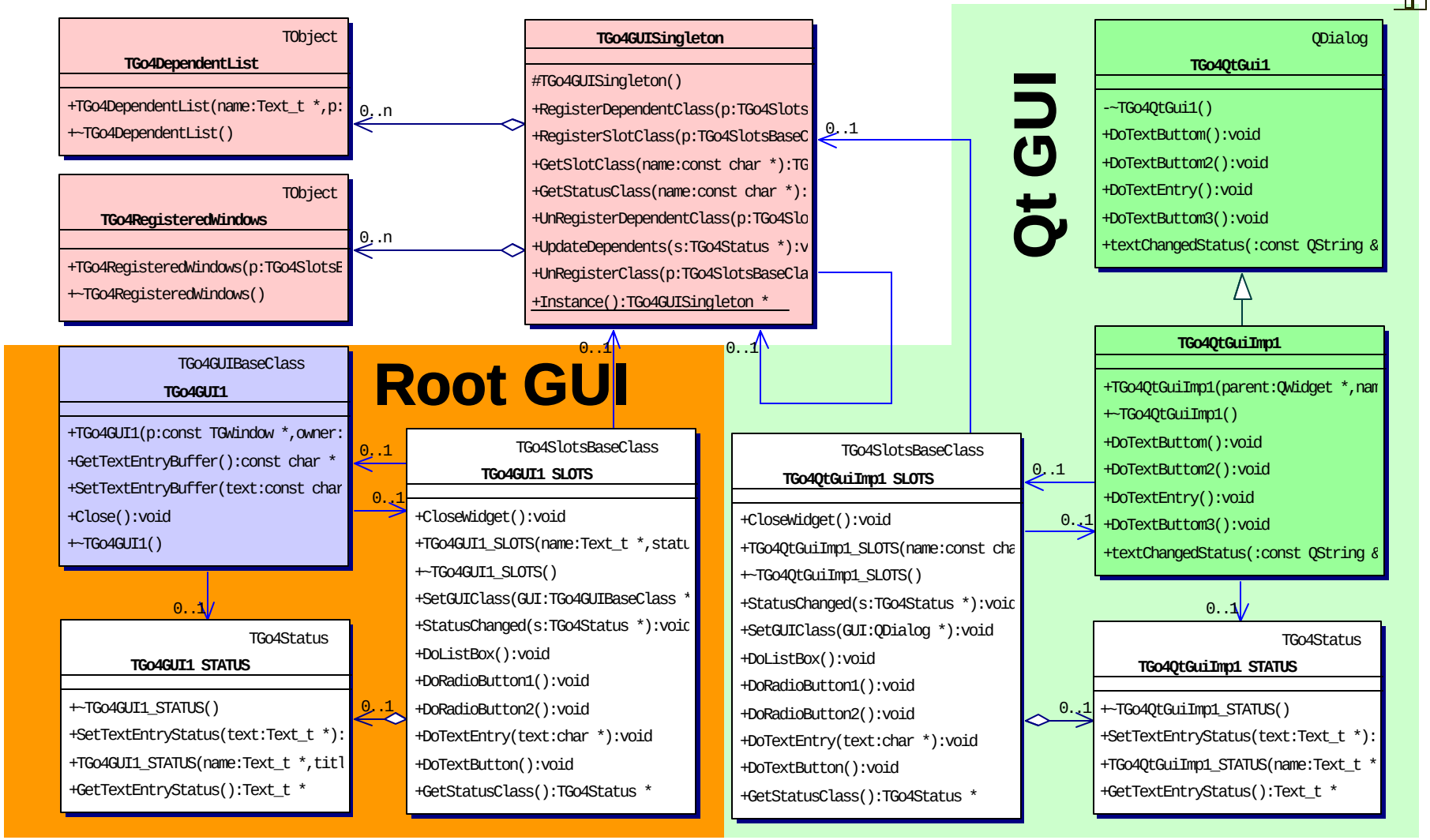
- **Non Blocking GUI**
- **Dynamical exchange of data**

  between different windows
- **Updating the status of a GUI window**

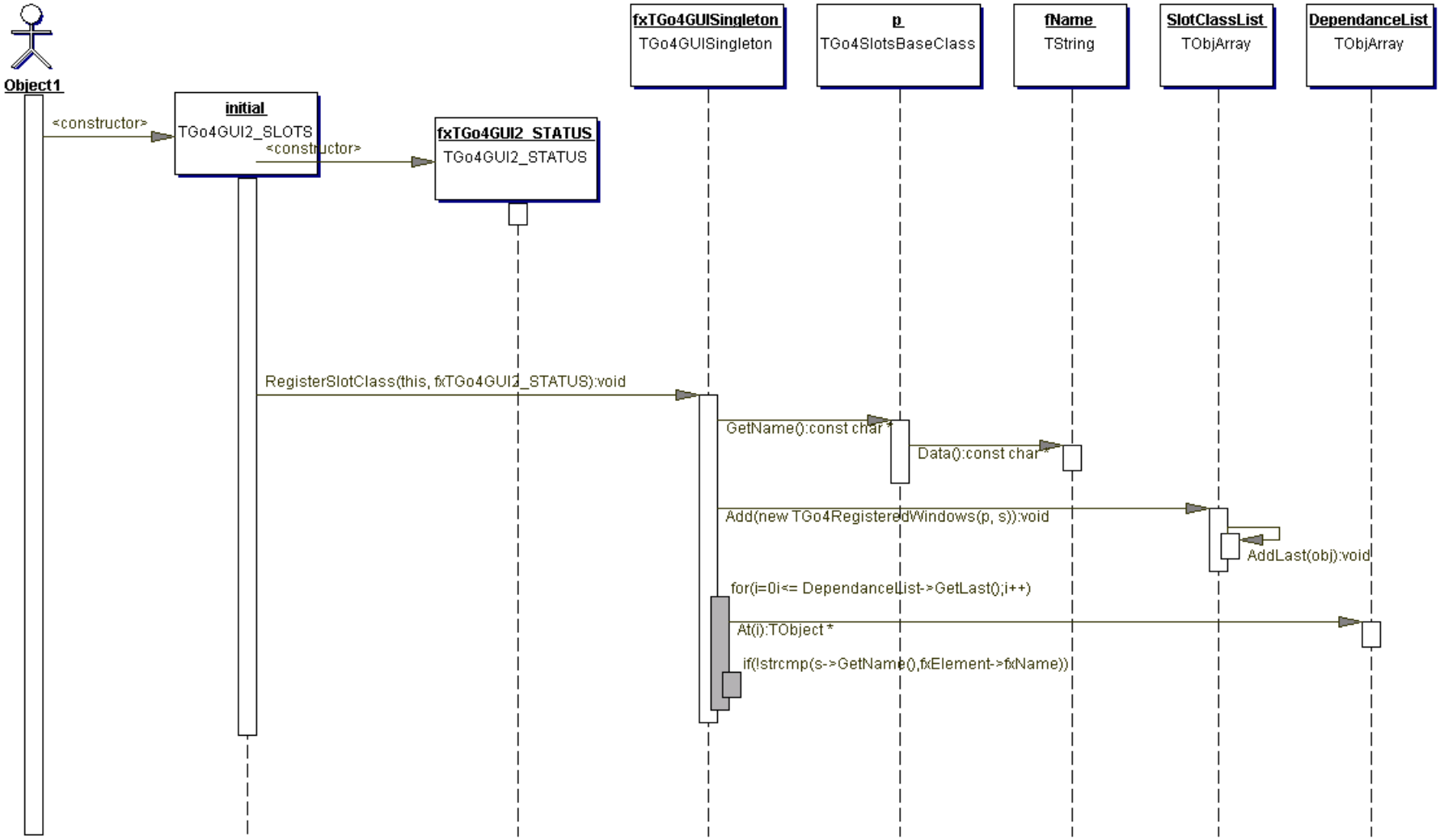
  even if it is not being displayed
- **Possibility to restore the status**

  of a closed windowat any time

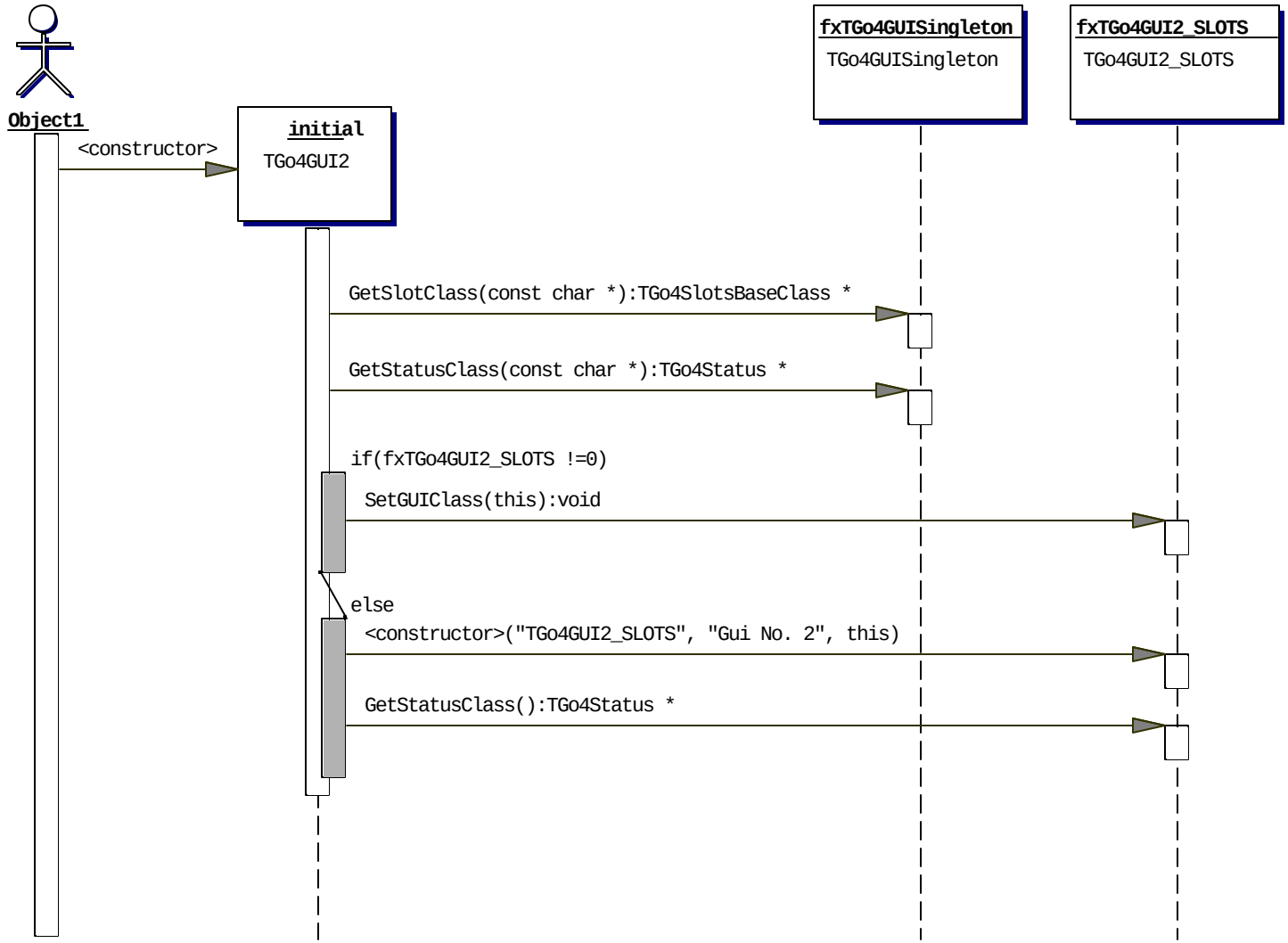
Design of the Go4 GUI



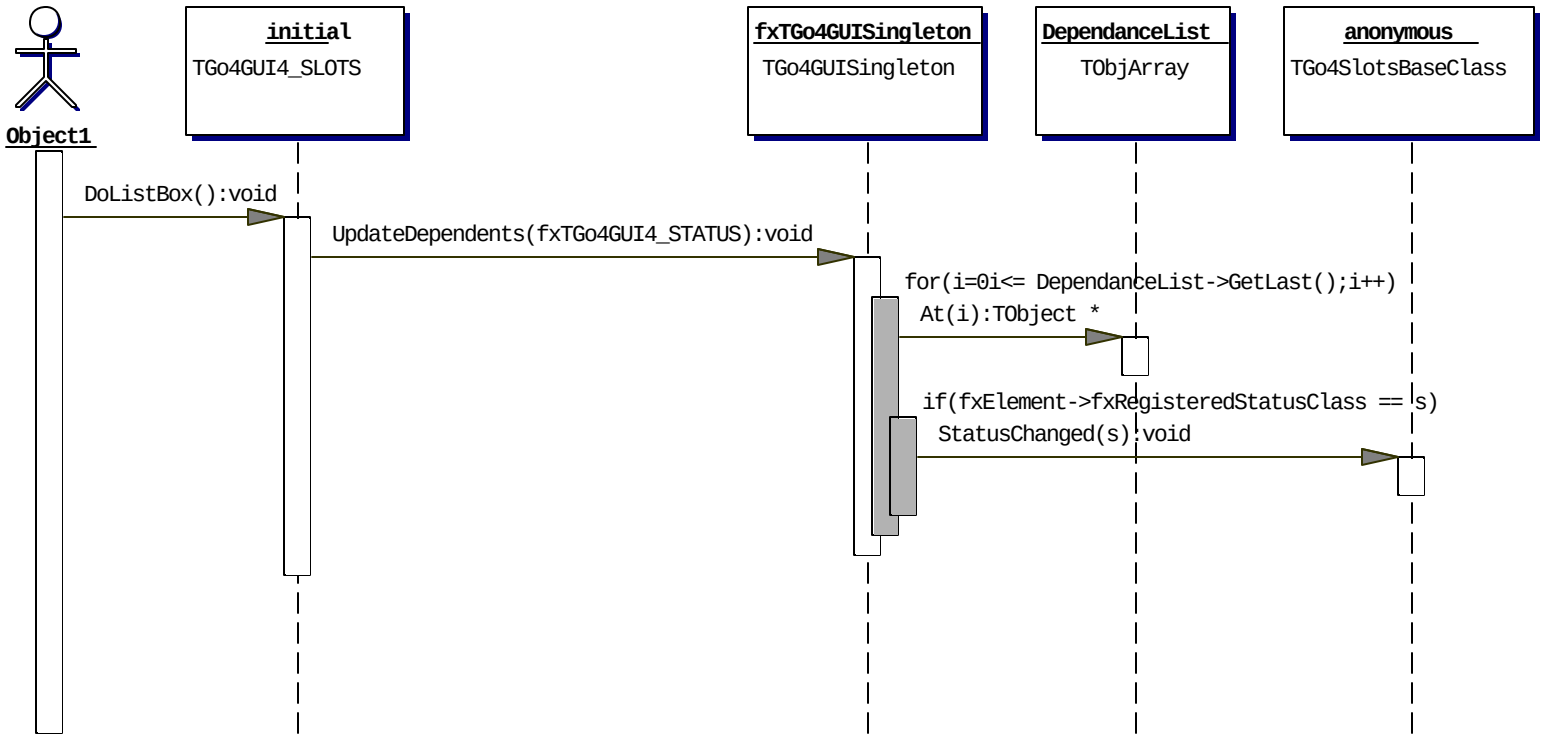
Registering a slot objects



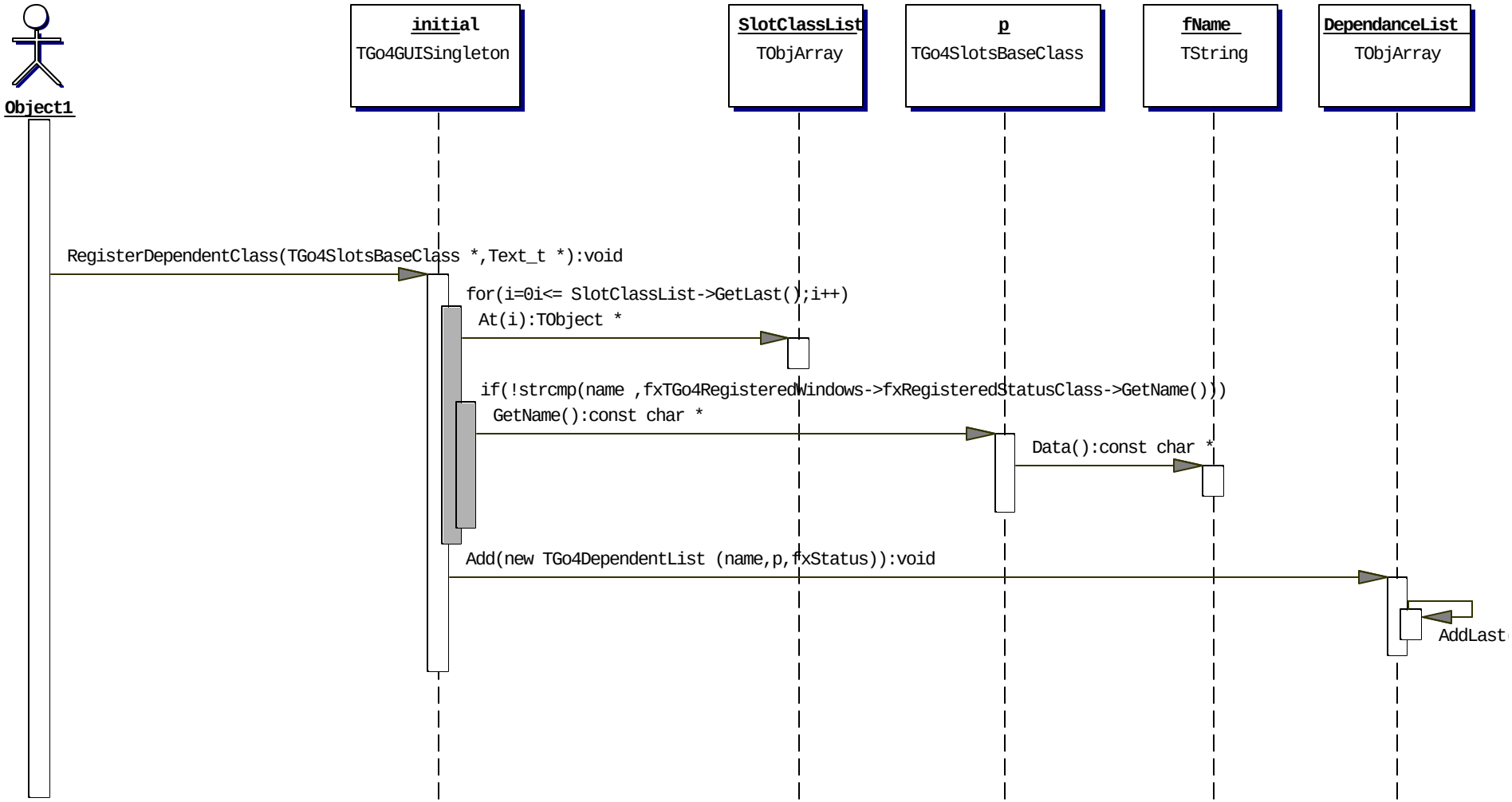
Getting a registered slot objects pointer



Updating dependents objects



Register a dependent object



Conclusions

- **This Design was implemented and tested with ROOT widgets and/or Qt widgets successfully**
- **The Qt-ROOT interface was tested successfully in the multi-tasking and multi-threading environment of the Go4**
- **Base Classes for building GUIs were designed and implemented**

go4.gsi.de