

Design and Implementation of a C++ Framework for Dynamic GUI Extensions

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Summary

- Outline
- Design
- Test and result
- Conclusion and Further Outlook

Outline

- Plug-in technique
- Framework technique
- Plug-in support in Intel Debugger GUI
- GUIv3 Architecture

Outline->Plug-in technique

What is a plug-in?

- computer program

How does a plug-in work?

- interacts with a main application (HOW?)

Why do we need a plug-in?

- provide a certain, usually very specific, function

Outline->Framework technique

What is Framework?

- a defined support structure

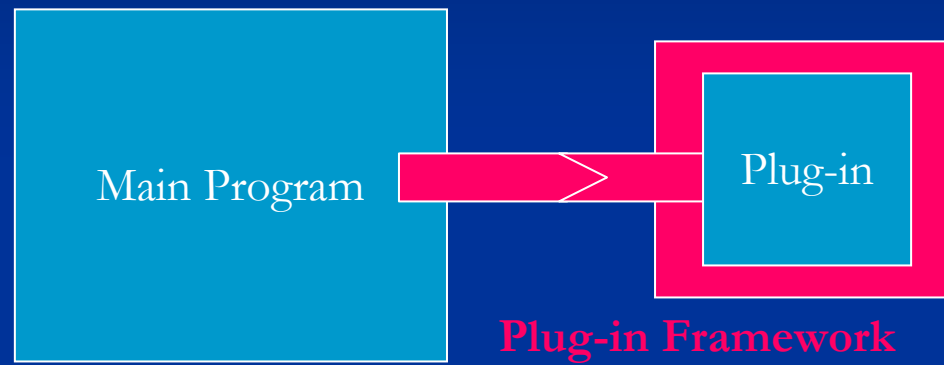
How does Framework work?

- support interfaces, programs, code libraries, a scripting language

Why do we need Framework?

- glue together the different components of a software project
- help develop

Outline->Framework technique



Outline-> Plug-in support in Intel Debugger GUI

■ GUIv1

- EAPI, EAPI-GUI, TCI Interfaces, Only Windows

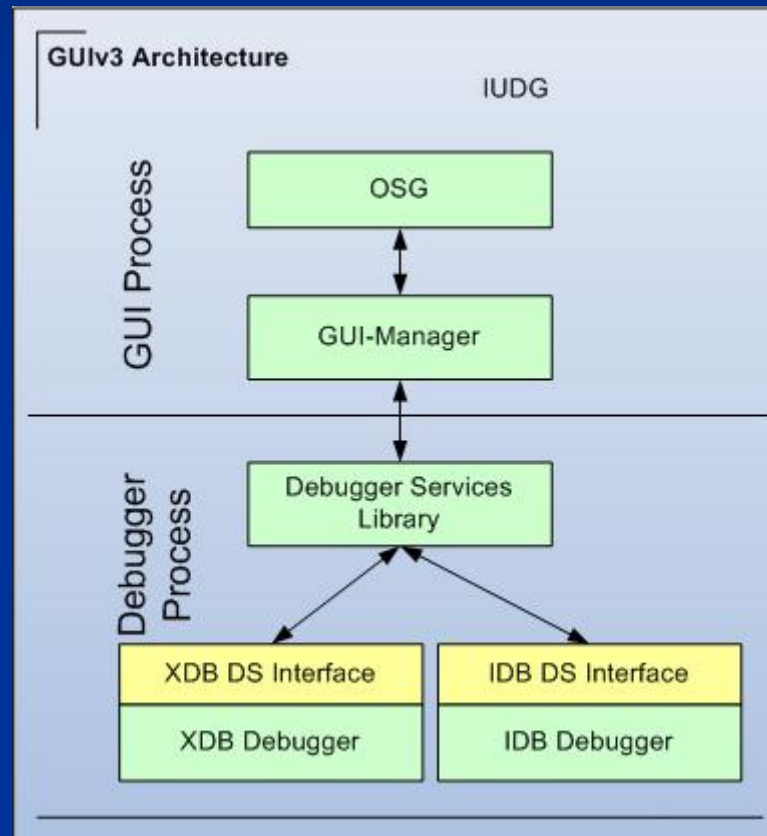
■ GUIv2

- C Framework, GUI Common, Only Windows

■ GUIv3

- C++, Java Framework, Windows & Linux

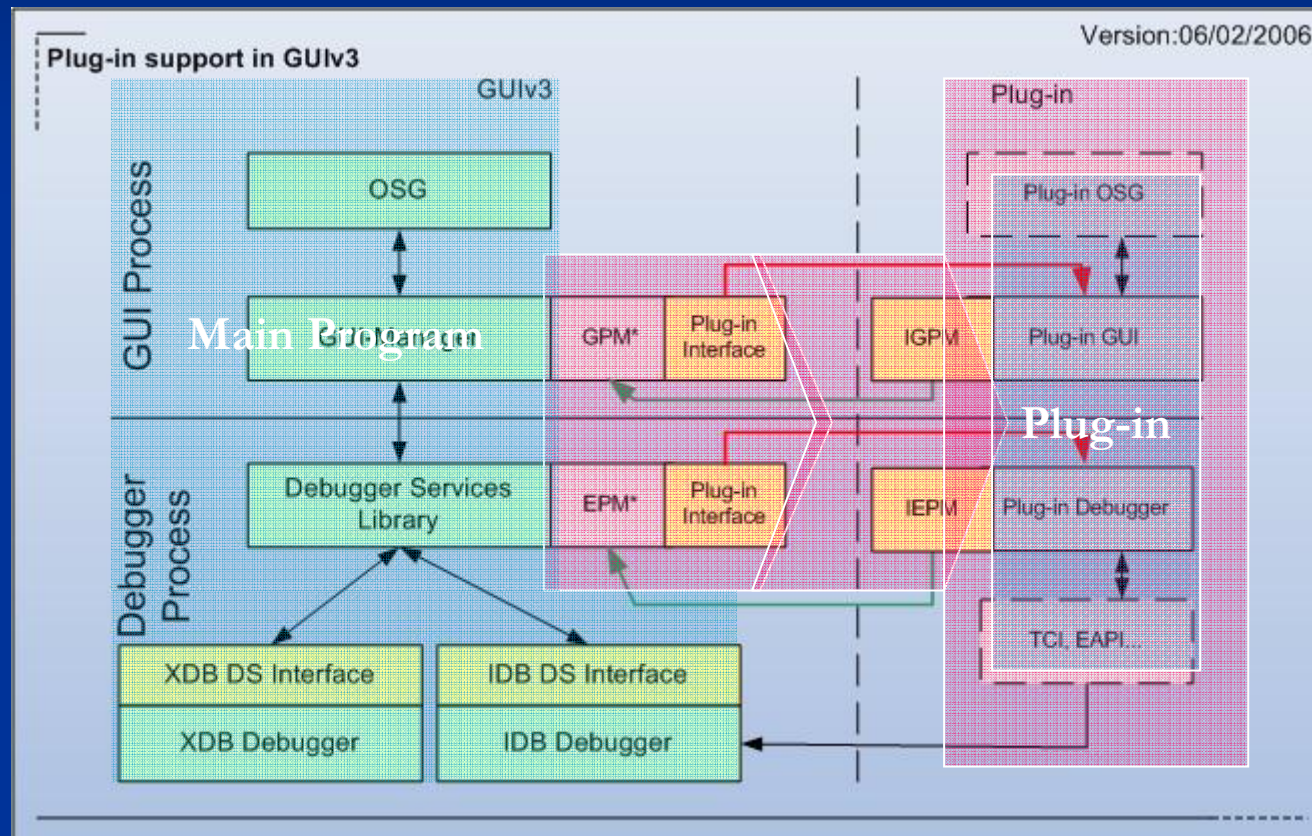
Outline-> GUIv3 Architecture



Design

- Architecture
- Engine Plug-in Framework
- GUI Plug-in Framework
- OSG Plug-in Framework
- Communication

Design-> Architecture

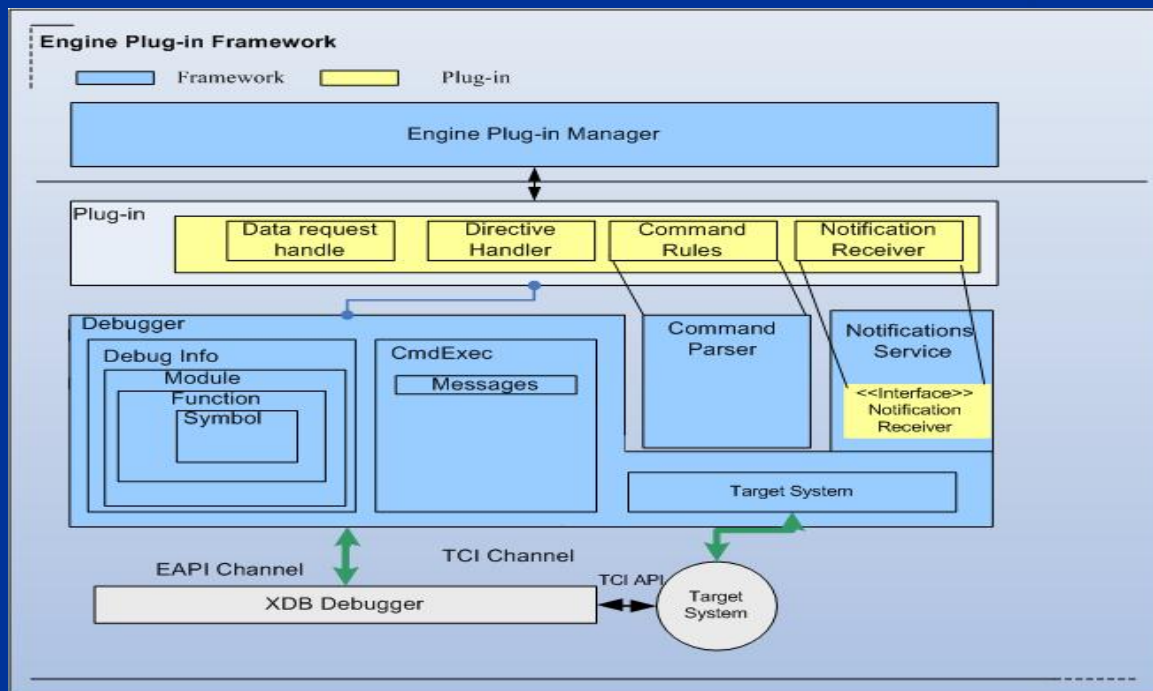


Design-> Engine Plug-in Framework

■ Funtionalities

- Help to access debugger core & Target System (Through interfaces)
- Help to design plug-in command
- Help to communicate with GUI Plug-in

■ Architecture

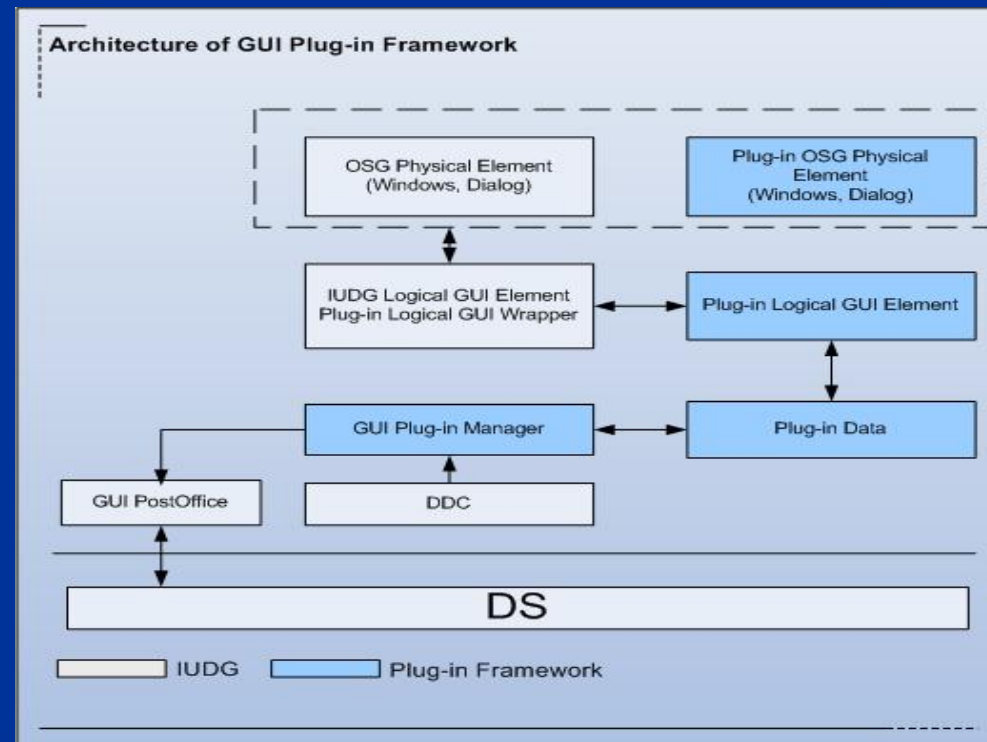


Design-> GUI Plug-in Framework

■ Functionalities

- Help to design logical GUI elements (windows, dialogs
- Help to communicate with Engine Plug-in

■ Architecture



Design-> OSG Plug-in Framework

■ Functionalities

- Help to design physical GUI elements (windows, dialogs, MenuItems, ToobarButtons
- Help to communicate with GUI Plug-in

■ RCP based Physical GUI design

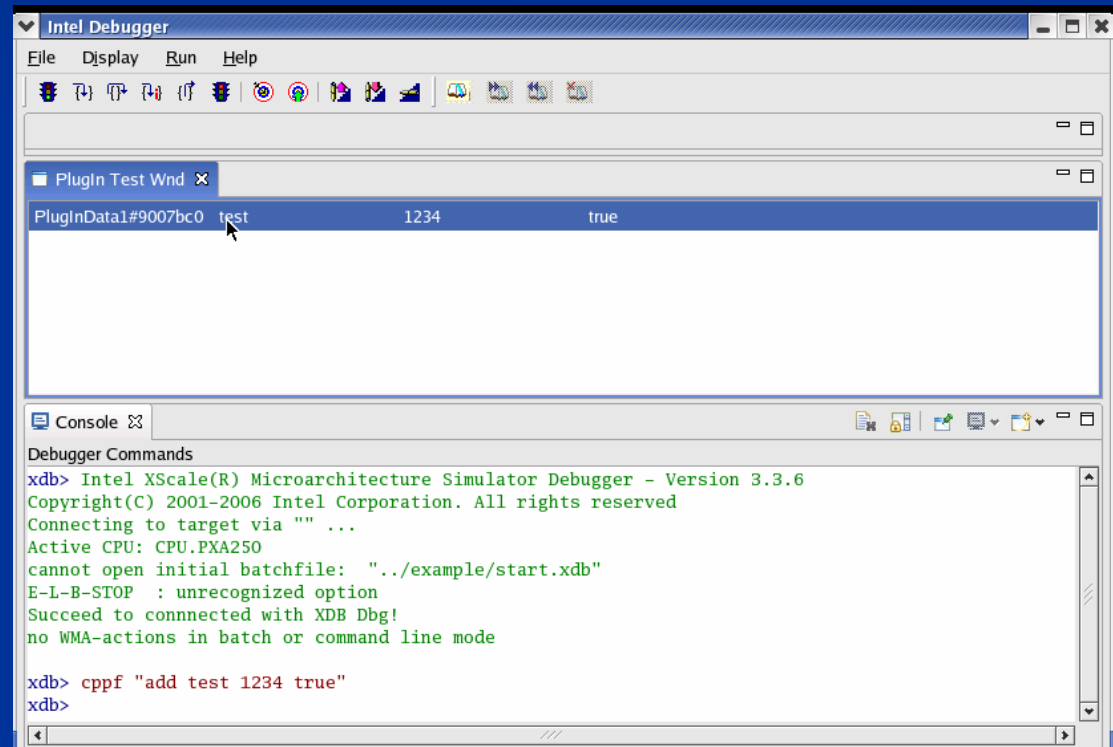
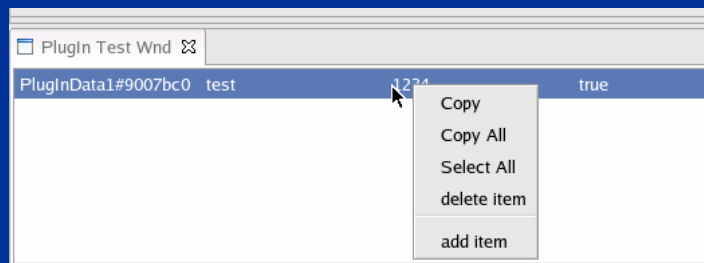
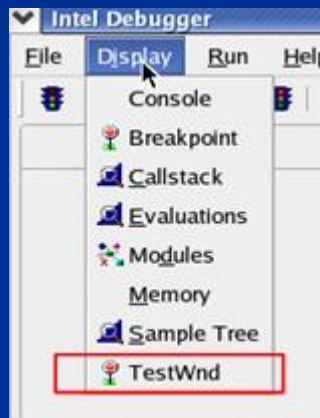
- Extension points

Design-> Communication

- Asynchronous communication between GUI & Engine Plug-in
 - Notifications
 - Directives
 - Plug-in Data
- Synchronous communication between GUI & OSG Plug-in
 - GUI Data
 - GUI Actions

Test and result

- A „Hello world“ Plug-in design using Plug-in Framework



Conclusion and Further Outlook

Conclusion:

- Easy to develop a Plug-in for GUIv3
- Full functionalities support
- Easy to be extended

Further Outlook

- XML based extension (command, shared information, data definition)
- Plug-in design wizard
- Basic code generate automatically

Questions?

Thanks!!!!!!