



# Instigate

Parallel Systems Development



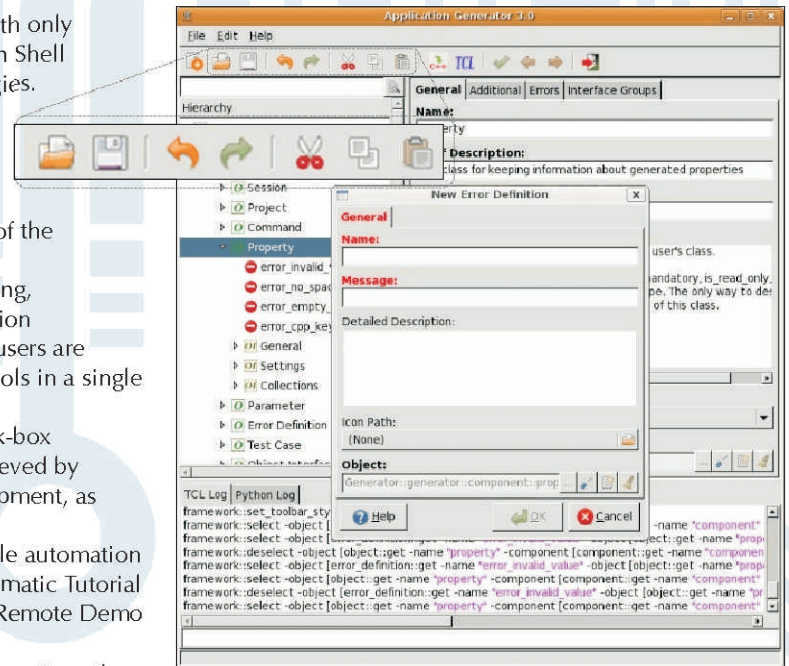
## Application Framework Overview

### INTRODUCTION

- Instigate Application Framework provides software development methodology supported by development tools and libraries for cost effective development of high quality desktop applications with focus on EDA applications

### BENEFITS

- Framework enables development of modern industry-standard Command Line User Interface and Graphical User Interface with only a fraction of typical R&D effort. Early availability of Application Shell facilitates adoption of Extreme/Agile programming methodologies.
- Included EDA libraries and tools enable use of industry common components, like HDL parsers, schematic editors, without any additional development cost. Developed generic concepts of these components enable Developers to use their own database and concentrate on the business logic of the application without rewriting the functionality.
- Framework comes with collaborative capability for issue tracking, version control, user / session management supporting integration with popular development tools like SVN, Bugzilla, Trac. End-users are encouraged to use the great capabilities of industry standard tools in a single development environment for increased quality and efficiency.
- Test-case generation tools for Quality Assurance facilitate black-box verification of the software with more than 50% coverage achieved by automatic test-case generators in the early stages of the development, as required by the modern development methodologies.
- Session record and replay tools for Application Engineers enable automation of Customer Training, Interactive Demos, Remote Demos, automatic Tutorial Generation. Field AEs can perform distance training using the Remote Demo capability.
- Documentation generation tools enable Literate Programming – automatic generation of Reference Manual and Context-Sensitive Help from the same source as the code, with less than 30% of the effort that is typically spent by Tech-Writer team. Important benefit of Literate Programming is that the reference documentation is always up-to-date and is available starting from early stages of the development.



### DATABASE INDEPENDENCE

- Main benefit of Instigate Application Framework is genericity and non-intrusiveness. Framework does not enforce its own database upon an application developer. Vice versa - developers are encouraged to design their own data structures to represent their design data. Framework provides API for developers to register their database objects, their properties, methods, as well as global functions and algorithms.

### AUTOMATIC GENERATION OF DIALOGS AND USER INTERFACE

- The Graphical User Interface and the Command Line Interface are automatically generated by Framework for all the registered objects and functions. The Application Developer is not required to code GUI Dialogs or manually register TCL/Python commands in the Command Line Interface.

### AUTOMATIC SERIALIZATION

- Since the very beginning of the development flow all the published objects can be stored into a database (script/xml/DBMS) and loaded back without any additional R&D effort spent on serialization implementation.

### AUTOMATIC UNDO/REDO

- For all the object modifications (creation, deletion, modification of properties) the "undo" operation is available automatically, without any additional R&D effort to code this mandatory, effort consuming, and yet unappreciated feature of modern desktop applications.

### AUTOMATIC COPY/PASTE

- Cut/Copy/Paste is another mandatory functionality in modern desktop applications which due to its complexity is not always available in EDA applications. For all the registered objects Application Framework provides this functionality automatically, again, without any R&D effort.



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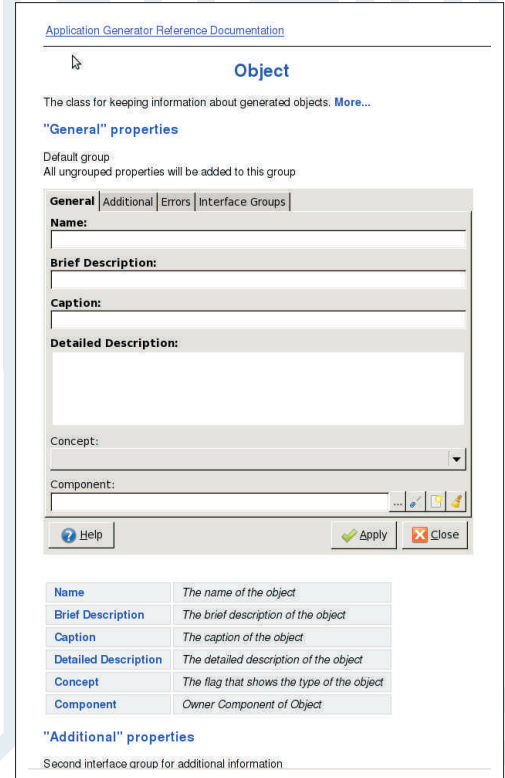
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### AUTOMATIC DOCUMENTATION GENERATION

- Object registration API also provides means to enter description of all the objects, their properties, methods, and method parameters. The descriptions are used for generation of high quality standard-compliant Reference Manual for the application. Documentation is generated in cross referenced HTML and PDF.

### AUTOMATIC REGRESSION TESTS GENERATION

- Registered Database objects are wrapped into a scripting interface enabling easy manipulation of application objects. Framework uses this interface and automatically generates black-box tests for all the registered objects and properties. The tests are built using automating execution and reporting environment, thus developers are sure that the product is being verified from the early stages of the development without any QA effort



## Application Framework Quotes

### DAFCA Inc.

#### Instigate's Application Framework deployed in building of IP-XACT package editor tool

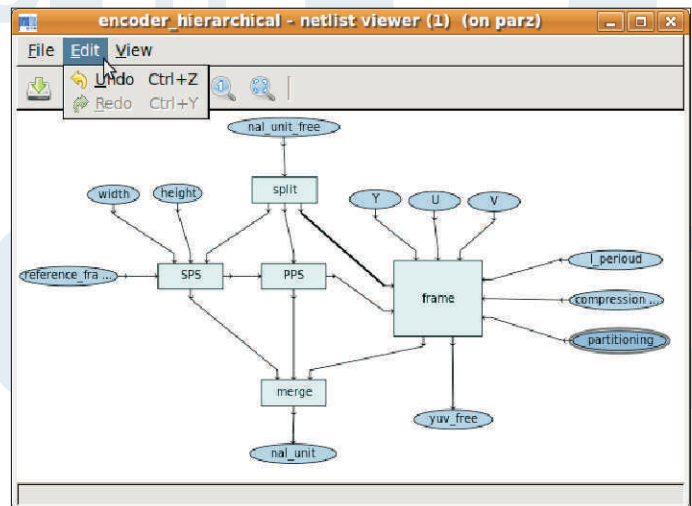
Instigate's Application Framework was utilized to develop IP-XACT package generation tool, saving many months of development effort. The tool produces IP-XACT packages from imported modules provided by its users. The key aspects of the work were:

- IP-XACT tool created by Instigate based on only a spec provided by customer
- Tool's GUI, TCL interface, database save-load, etc. were all developed by Instigate using the Application Framework under customer's supervision
- Instigate's Application Framework provided time and cost savings via its following capabilities:
  - Automated generation of GUI dialogs
  - Automated generation of high quality reference manual(s) for the TCL and Graphical Interface, reducing the effort of technical writers by 90%
  - Generation of basic unit-tests for most of the user interface commands, reducing the typical QA effort to a fraction of its typical level
  - Completely automated support of Undo/Redo, Copy/Paste, and Drag-&-Drop in tool's GUI (with no engineering effort)

### ProximusDA GmbH

#### Instigate's Application Framework deployed in building ESL design tool

Instigate's Application Framework is used in 2008 and 2009 editions of an ESL design tool. It helped us very much to focus our SW development team to the development of our core technology by greatly reducing coding effort for our application GUI and UI and handling almost all of our techwriting effort. Indirectly we, in addition, had a benefit of approximately 50% lower QA effort. Cost saving I estimated to be about an equivalent of 3 man years of effort that we would otherwise have to have spent on non-critical aspects of our tool. Examples are the implementation of important but not key features of our tools such as Copy-Paste, Undo-Redo, drag&drop and similar functions, which are mandatory for any modern tool but require significant effort to implement and verify. Also we like explicitly the Automatic Generation of GUI dialogs: This ensures that we maintain coherent use-model and style across all modules and versions of the tool. The automatic generation of reference documentation is critical for us: It ensures that we maintain



### 4TIITOO

#### Instigate Application Framework deployed in building in Photo Album application

4tiitoo subcontracted Instigate to implement Photo Album application for WeTab, a linux-based touchpad device similar to the iPad. Instigate used its Application Framework for development of underlying infrastructure and interface, achieving significant reduction of effort, especially in the verification area, thanks to automatically enabled record & replay capability for all GUI operations. We are looking forward to starting new projects with Instigate, to develop. More applications for the WeTab.