Preliminaries before using ETAC

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ETAC Documents

ETAC_Preliminaries.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

Preliminaries before using ETAC

This document.

ETACOverview.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

An Overview of ETAC

Presents an overview of the ETAC programming language with examples.

ETACProgLang(Official).pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

The Official ETAC Programming Language

This is the official definition of the ETAC programming language. Includes the definition of the language, debugging, programming guide, and reference, as well as a few appendices.

ETACVisualInteractionSystem.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

ETAC: Visual Interaction System

This is the official definition of the ETAC Visual Interaction System (VIS). Includes the definition of VIS, programming guide, and reference, as well as a few appendices. VIS allows an ETAC application program to create windowed 2-D interactive graphics.

VISShapePathFnts.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

VIS Shape Path Functions

Describes the functions for creating and manipulating vector shape paths.

VISPointSetFnts.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

VIS Point Set Functions

Describes the functions for sets of points to other points.

RunETAC.chm (in: ‹RunETAC_..._Installer.exe›)

Run ETAC Scripts Help

Presents an overview of the events that occur when running an ETAC code file. Also describes the command line parameters for ‘RunETAC.exe’.

ETACWithCPP.pdf (in: ‹AppETAC_..._Installer.exe›)

ETAC: Interacting with C++

Describes how application programs written in the C++ programming language can intercommunicate directly with the ETAC interpreter, and also how to create *external TAC libraries*.

ETACCompiler.pdf (in: ‹ETACCompiler_..._Installer.exe›)

The ETAC Compiler

Describes how to use the **ETAC Compiler** program to convert one *ETAC code* file to another, and how to do a thorough syntax check on *ETAC text script* files.

ETACCompiler.chm (in: ‹ETACCompiler_..._Installer.exe›)

ETAC Compiler Help

Describes the command line parameters for ‘ETACCompiler.exe’.

ETACErrorCodes.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

ETAC Compilation and Run-time Error Codes

Presents the compilation and run-time error codes produced when running or compiling *ETAC code* files.

ETACSource_....pdf (in: ‹ETACSource_..._Installer.exe›)

ETAC Source Files

Describes the ETAC source files.

FunctionsETACScriptLib.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

Functions ETAC Script Library

Describes the functions in the Functions ETAC Script Library.

SplineScriptFnts.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

Spline ETAC Script Library

Describes the functions in the Spline ETAC Script Library. This is a library of functions involving Bezier and B-splines.

PathScriptFnts.pdf (in: ‹RunETAC_..._Installer.exe›, ‹AppETAC_..._Installer.exe›)

Path ETAC Script Library

Describes the functions in the Path ETAC Script Library. This is a library of functions

involving general paths.

Legal Information

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Document Conventions

The following symbolic conventions are used in this document.

Symbol	Meaning
‹*x*›	separates *x* as a unit of information from the surrounding text.
...	represents omitted text (as usual).
text	maroon coloured italic text is a link to the text's definition.
text	underlined green text is a link into the document.

ETAC Preliminaries

This document is concordant with the contents of **ETAC_Installers_4-ena.zip**.

(Australian English)

1. Introduction

This is the first document that should be read before installing the ETAC™ package for the first time. The ETAC package is obtained from the 'https://www.victella.me/ETAC' website by downloading the ‹ETAC_Installers_....zip› file (the ellipsis represents the version identification of the file). All ETAC documentation is included with the package. You do not need an Internet connection to install or use ETAC.

The ETAC package is free of charge, but is not open source or publicly owned. It is privately owned and copyrighted, and there are some licence restrictions on its use. The relevant licence terms and conditions are presented with each installation, and also included in the installation. The licence files are: 'RunETAC_Licence.pdf', 'AppETAC_Licence.pdf', and 'ETACSource_Licence.pdf'. There is also an auxiliary licence file, 'ECGTemplates_Licence.pdf', for the template files included with the **ETAC Code Generator**.

ETAC is released only in the (Australian) English language.

The C++ source code for the ETAC system is not available, but *ETAC code* files used by ETAC are included in the relevant installers within ‹ETAC_Installers_....zip›.

2. System Requirements

ETAC is only released for the **Windows**® operating system using the x86 (32-bit) architecture (it can also run on the x64 (64-bit) architecture) beginning with **Windows**® **XP**. Note that ETAC is not released for other platforms and non-**Windows**® operating systems. It is expected to operate correctly on any **Windows**® operating system compatible with the one mentioned. The nominal memory usage of ETAC is insignificant. ETAC was only tested on the **Windows**® **XP** (x86) and **Windows**® **7** (x64) operating systems before release.

3. Installing and Running ETAC

The downloaded ‹ETAC_Installers_....zip› file contains the following four self-installation executable files, along with a copy of this document (ETAC_Preliminaries.pdf).

- ‹RunETAC_..._Installer.exe› (**Run ETAC Files**) contains the ETAC documents and the core ETAC files to run ETAC programs. It also contains some ETAC utility programs.
- ‹AppETAC_..._Installer.exe› (**ETAC for Applications**) contains the ETAC documents and files to run ETAC programs from an application program written in the C++ programming language. It also contains the C++ header files to create *external TAC libraries*.
- ‹ETACCompiler_..._Installer.exe› (**ETAC Compiler**) contains the documents and the ETAC compiler to convert *ETAC code* files from one form to another, and to syntax check *ETAC text script* files.
- ‹ETACSource_..._Installer.exe› (**ETAC Source Files**) contains the *ETAC text script* files for the ETAC system and ETAC utility programs.

Extract the desired installers from the ‹ETAC_Installers_....zip› file, and execute them in the order stated above. Installing at least one of ‹RunETAC_..._Installer.exe› and ‹AppETAC_..._Installer.exe› is essential to run *ETAC code* files. ‹ETACCompiler_..._Installer.exe› and ‹ETACSource_..._Installer.exe› are not essential to install. The fixed installations of **Run ETAC Files**, **ETAC for Applications**, and **ETAC Compiler** will necessarily be installed in the same folder (typically under the program files folder).

‹RunETAC_...._Installer.exe›, ‹AppETAC_...._Installer.exe›, and ‹ETACCompiler_...._Installer.exe› need to be installed from an administration account. From a non-administration account, ‹RunETAC_... _Installer.exe› only allows you to install a portable instance of **Run ETAC Scripts**, and ‹AppETAC_... _Installer.exe› only allows you to install a distribution instance of **ETAC for Applications**. ‹ETACSource_...._Installer.exe› can be executed from a non-administration account to install **ETAC Source Files**.

The following sections describe the different types of installations.

3.1 Fixed Installation of Run ETAC Scripts

This (fixed) installation type is suitable for regular use of **Run ETAC Scripts**, and is installed via ‹RunETAC_...._Installer.exe›.

This installation creates system registry entries enabling context menu commands for running, debugging, and editing ETAC files, and also allows a new initialised *ETAC text script* file to be created via the 'New' command in the general context menu. A context menu is the pop-up menu that appears when the menu button is clicked over a file name in **Windows Explorer**. The context menu commands for *ETAC text script* files are: 'Run', 'Edit', 'Debug', and 'Start'. The context menu commands for *ETAC binary files* are: 'Run' and 'Start'. The installation also optionally allows `Desktop` items and Start Menu items to be created. Note that to enable context menu commands, the installer needs to create '`.etac`' and '`.btac`' system registry entries. If those entries already exist, they will be overwritten by the installer.

There are a number of ways to run an *ETAC code* file (for file extensions 'etac' and 'btac' only):

1. double-click on the file,
2. click on 'Run ETAC Scripts' in the ETAC section of the Start Menu,
3. double-click 'Run ETAC Scripts' icon on the `Desktop`,
4. drag an *ETAC code* file onto the 'RunETAC Info' icon on the `Desktop`, or
5. click one of the following context menu commands on the *ETAC code* file.

Context Menu Commands	
Run	Executes the file immediately. This is the default.
Debug	(for file extension 'etac' only) Presents the ETAC Start Box from which the file is executed in debug mode, presenting a debug window. You can trace the execution of the file while in debug mode. (See section **2**, **ETAC Debugger**, in 'ETACProgLang(Official).pdf'.)
Edit	(for file extension 'etac' only) Opens the **Windows Notepad** program from which the file can be edited.
Start	Presents the ETAC Start Box from which the file can be executed immediately.

ETAC code files can also be run from shortcut files (see 4_Creating Shortcut Files) or command files (‹*.cmd›) (see 5_Creating Command Files).

To uninstall **Run ETAC Scripts**, use **Windows Control Panel**, or execute 'Uninstall-RunETAC.exe' in the installation folder. Files that were not installed by the installer will not be deleted. **Run ETAC Scripts** can only be uninstalled from an administration account.

3.2 Portable Installation of Run ETAC Scripts

This (portable) installation type is suitable for running *ETAC code* files on a computer that does not have **Run ETAC Scripts** installed, and is installed via ‹RunETAC_...._Installer.exe›.

This installation does not create system registry entries, context menu commands, Start Menu items, or `Desktop` shortcuts. The installation does create shortcuts in the installation folder.

A portable instance of **Run ETAC Scripts** is typically installed onto a removable disk before the fixed instance of **Run ETAC Scripts** is installed, otherwise a portable instance can only be installed from a non-administration account.

ETAC code files can be run by double-clicking the 'Run ETAC Scripts' icon, or by dragging an *ETAC code* file onto the 'RunETAC Info' icon; both icons exist in the installation folder but can be copied to the `Desktop`. *ETAC code* files can also be run from shortcut files (see 4_Creating Shortcut Files) or command files (‹*.cmd›) (see 5_Creating Command Files).

ETAC text script files can be syntax checked from the 'Syntax Check ETAC File' icon in the installation folder. The icon exists only if the 'CheckETACFile' option under 'ETAC Utilities' in the installer had been selected. Note that **ETAC Compiler** needs to be installed to syntax check *ETAC text script* files. The easiest way to install **ETAC Compiler** for a portable **Run ETAC Scripts** installation is to create the folder 'ETACCompiler' in the same portable installation folder that contains the 'RunETAC' folder, then copy 'ETACCompiler.exe' into that created folder (note that the folders 'ETACCompiler' and 'RunETAC' should be at the same level). 'ETACCompiler.exe' is obtained from a computer that has **ETAC Compiler** already installed. You will also need to copy the file 'RunETAC.ini' from the 'RunETAC' folder of the portable installation into the created 'ETACCompiler' folder, and rename the copied file to 'ETACCompiler.ini'.

If ‹RunETAC_**...**_Installer.exe› is copied to an existing portable installation folder (the parent folder of the 'RunETAC' folder), and run from there, then selected ETAC utility programs can be added to the portable installation.

To uninstall a portable installation of **Run ETAC Scripts**, delete the portable installation folder.

3.3 Fixed Installation of ETAC for Applications

This (fixed) installation type is suitable for developing *external TAC libraries*, or for developing C++ programs that load the ETAC interpreter ('AppETAC.dll'), and is installed via ‹AppETAC_**...**_Installer.exe›. Typically, application programs that load the ETAC interpreter, and that are created for your own use, go in the 'AppETAC' folder. This installation type is not required if you do not intend to create application programs that load the ETAC interpreter, or if you do not intend to write *external TAC libraries*.

This installation creates system registry entries. Note that **Run ETAC Scripts** is not required to be installed for this installation type.

With this installation type, *ETAC code* files are executed via a compiled C++ program (see the document 'ETACWithCPP.pdf').

To uninstall **ETAC for Applications**, use **Windows Control Panel**, or execute 'Uninstall-AppETAC.exe' in the installation folder. Files that were not installed by the installer will not be deleted. **ETAC for Applications** can only be uninstall from an administration account.

3.4 Distribution Installation of ETAC for Applications

This (distribution) installation type is used with your distributed program to run *ETAC code* files on a customer's computer, and is installed via ‹AppETAC_**...**_Installer.exe›. Your main distributed program that loads the ETAC interpreter ('AppETAC.dll') goes in the installation folder. This installation type is not required if you do not intend to distribute application programs that load the ETAC interpreter.

This installation does not create system registry entries. Note that **Run ETAC Scripts** is not required to be installed for this installation type.

To uninstall a distribution installation of **ETAC for Applications**, delete the installation folder.

3.5 Fixed Installation of ETAC Compiler

This (fixed) installation type is used to convert *ETAC code* files from one form to another, or to do a thorough syntax check on *ETAC text script* files, and is installed via ‹ETACCompiler_**...**_Installer.exe›.

This installation creates system registry entries enabling context menu commands for compiling *ETAC text script* files and editing `ETAC Compiler Arguments` files. A context menu is the pop-up menu that appears when the menu button is clicked over a file name in **Windows Explorer**. The context menu commands for `ETAC Compiler Arguments` files are: 'Process' and 'Edit'. The installation also

optionally allows Desktop items and Start Menu items to be created. Note that to enable context menu commands, the installer needs to create an '.ecarg' (extension for ETAC Compiler Arguments files) system registry entry. If that entry already exists, it will be overwritten by the installer.

An ETAC Compiler Arguments file (extension 'ecarg') is a text file containing keywords and their arguments to compile one or more *ETAC code* files, or to syntax check one or more *ETAC text script* files.

This installation is not required if you do not wish to compile *ETAC text script* files into *ETAC binary files*, or otherwise convert one form of *ETAC code* files into another, of if you do not wish to do thorough syntax checks of your *ETAC text script* files with errors and warnings highlighted in a graphical window.

NOTE: Either **Run ETAC Scripts** or **ETAC for Applications** is required to be installed for this installation type so that **ETAC Compiler** can use the inclusion files in either of those installations.

NOTE: It is not necessary to install **ETAC Compiler** to run *ETAC text script* files. The ETAC interpreter does a simple syntax check on *ETAC text script* files before they are executed. The **ETAC Compiler** program does a more thorough graphical presentation of syntax errors and warnings for *ETAC text script* files (see 'ETACCompiler.pdf' for more details).

There are a number of ways to compile an *ETAC code* file, or syntax check an *ETAC text script* file:

1. double-click on an appropriate ETAC Compiler Arguments file,
2. double-click the 'Compile ETAC' icon on the Desktop, or
3. click one of the following context menu commands on an ETAC Compiler Arguments file.

Context Menu Commands	
Process	Presents the contents of the ETAC Compiler Arguments file to edit or process. This is the default.
Edit	Opens the **Windows Notepad** program from which the ETAC Compiler Arguments file can be edited.

It is also possible to immediately create an *ETAC binary file* from an *ETAC text script* file by dragging and dropping an *ETAC text script* file onto the 'Compile ETAC' icon. This will create an ETAC Compiler Arguments file and a folder named 'Release' in the same folder containing the *ETAC text script* file. The *ETAC binary file* will be created (or overwritten) in the 'Release' folder. If the ETAC Compiler Arguments file already exists in the folder containing the dragged file, it will be used instead of being created.

To uninstall **ETAC Compiler**, use **Windows Control Panel**, or execute 'Uninstall-ETACCompiler.exe' in the installation folder. Files that were not installed by the installer will not be deleted. **ETAC Compiler** can only be uninstalled from an administration account.

3.6 Installation of ETAC Source Files

This installation type is for inspecting the ETAC system and ETAC utilities source files, and is installed via ‹ETACSource_…_Installer.exe›. This installation type is not required if you do not wish to inspect the *ETAC text script* files for the ETAC system or for the ETAC utilities.

This installation does not create system registry entries, context menu commands, Start Menu items, or Desktop shortcuts. Note that **Run ETAC Scripts** (or, unusually, **ETAC for Applications**) is required for running the *ETAC text script* files.

'SetNewLoc.etac' needs to be run after installing **ETAC Source Files** (running 'SetNewLoc.etac' of course requires that **Run ETAC Scripts** is installed). Note that 'SetNewLoc.etac' may need to be run from an administration account to update the **Run ETAC Files** files. (See ‹ETACSource_….pdf› for more details.)

To uninstall **ETAC Source Files**, delete the installation folder.

4. Creating Shortcut Files

Shortcut files can be created for running *ETAC code* files. There are four ways to configure such a shortcut file.

1. The target of the shortcut can be the full file path of the 'RunETAC.exe' executable file. The arguments for the target would be as described in the help document 'RunETAC.chm'. This configuration is suitable for a fixed or portable installation of **Run ETAC Files**.
2. The target of the shortcut can be the full file path of an *ETAC code* file. The arguments for the target would be the (typically) single quoted argument string for the *ETAC code* file. Following the argument string would be the arguments (if any) for 'RunETAC.exe'. Note that the target along with its quoted string argument is actually the argument of 'SCRIPTS=' of 'RunETAC.exe' (see the help document 'RunETAC.chm' for information about the arguments of 'RunETAC.exe'). **Run ETAC Scripts** needs to be a fixed installation for this configuration to succeed.
3. A shortcut to a command file (‹*.cmd›) can be created to run *ETAC code* files (see 5_Creating Command Files). This configuration is suitable for a fixed or portable installation of **Run ETAC Files**.
4. The target of the shortcut can be the full file path of the 'RunETAC.exe' executable file. One of the target's argument is 'SCRIPTS="System\ETAC.tac" *dir*, *ec-file arg*', where *dir* is the directory required by the *ETAC code* file, *ec-file*, which is relative to *dir*. *arg* is the argument string for *ec-file* if required. Other arguments for the target would be as described in the help document 'RunETAC.chm'. The working directory in the shortcut would be empty. For example,

   '...RunETAC.exe SCRIPTS="System\ETAC.tac" 'Scripts\VISTutor', VISTutor.btac'

   This configuration is most suitable for a portable installation of **Run ETAC Files**.

5. Creating Command Files

An *ETAC code* file can be run from a command file (‹*.cmd›). The least troublesome way to do this is to use the 'start' subcommand. For a portable installation of **Run ETAC Files**, the full file path of 'RunETAC.exe' must be used; for a fixed installation, the full file path need not be present. The arguments for 'RunETAC.exe' are as described in the help document 'RunETAC.chm', and the arguments for the *ETAC code* file itself are best put within single quotation characters. Note that in a command file, batch parameters (such as '%1', '%~1', and '%~dp1') can be used.

The following is an illustration of the contents of a command file to execute an *ETAC text script* file 'MyETACFile.etac' that takes a parameter string ('my parameter'), and a keyword to prevent the program finished message from appearing. The example below works for a fixed installation of **Run ETAC Files** only.

```
start "" "RunETAC.exe" NO_EXIT_MSG SCRIPTS="MyETACFile.etac" 'my parameter'
```

Alternatively, the following can be specified.

```
start "" "MyETACFile.etac" 'my parameter' NO_EXIT_MSG
```

Double-clicking the command file will execute it, causing an annoying brief command prompt window to appear. To prevent the prompt window from appearing, create a shortcut to the command file, and specify a minimised window in the shortcut file.

6. Editing ETAC Text Script Files

Any text editor can be used to edit *ETAC text script* files. However, an editor that has syntax highlighting and folding would be of great advantage. One such editor is the free **Notepad++** editor (obtainable from the World Wide Web), which can be used to edit other programming language files as well. The **Run ETAC Scripts** installation includes two files, 'FunctionList.xml' and 'ETACdef.xml' that can be used with **Notepad++**. The two files are installed in the '...\RunETAC\Templates' folder.

'FunctionList.xml' contains XML fragments that you need to incorporate into the 'functionList.xml' file supplied with **Notepad++**. **NOTE**: Do **not** replace the **Notepad++** supplied 'functionList.xml' file with

the one installed by **Run ETAC Scripts**. You must physically open the 'FunctionList.xml' file installed by **Run ETAC Scripts** and copy the fragments therein to the clipboard, then paste those fragments into the appropriate positions in the 'functionList.xml' file supplied in the installation directory of the **Notepad++** program.

'ETACdef.xml' is the **Notepad++** definition file for syntax highlighting *ETAC text script* displayed in the **Notepad++** editor window. Within **Notepad++**, select the menu 'Language→Define your language...'. Then 'Import...' the 'ETACdef.xml' file. **NOTE**: **Notepad++** cannot properly highlight raw (single quoted) ETAC strings due to the fact that raw strings allow a post-escape character sequence which **Notepad++** cannot recognise.

7. Epilogue

Now, you should be ready to install the ETAC system and experience the pure delight of programming in a to-the-point programming language (after you have read the documentation, of course) without having to deal with all the rigmarole typical of many other programming languages.

After installing the ETAC system, the first document that you should read to start programming in ETAC is 'ETACOverview.pdf', followed by 'ETACProgLang(Official).pdf'. If you want to do graphics programming, read 'ETACVisualInteractionSystem.pdf' as well. If you want to write some C++ code to interact with the ETAC interpreter, you should then read 'ETACWithCPP.pdf'.

Appendix A

Installation Directory Tree Structures

A.1 Introduction

This appendix presents the installation directory tree structure for the various installation types. The directory tree structure should not be modified, except where stated otherwise. The ETAC system assumes that the tree structure is as shown in this appendix.

A.2 Fixed Installations

The ETAC programming language software for fixed installations is installed in the following tree structure which is typically created under the program files directory. ***n*** is a number indicating the version of the file. ***m*** is a non-negative integer.

Victella (name chosen by the user during installation)
- **AppETAC** (**ETAC for Applications** installation)
  - **Documents**
    - AppETAC_Licence.pdf
    - AppETAC_Licence.rtf
    - ETACWithCPP.pdf
  - **Include**
    - aeAppETACPars_***n***.h (for C++ language)
    - AppETAC_***n***.h (for C++ language)
    - ExternTACLib_***n***.h (for C++ language)
    - ETIExtraFnts.cpp (for C++ language)
  - **Libs**
    - AppETAC.lib (import library for 'AppETAC.dll')
  - AppETAC.dll (contains the ETAC interpreter)
  - ETAC Web Site (shortcut)
  - Uninstall-AppETAC.exe
- **ETACCompiler** (**ETAC Compiler** installation)
  - **Data**
    - ETACCompiler.ini [w]
  - **Documents**
    - ETACCompiler Licence (shortcut to 'RunETAC\Documents\RunETAC_Licence.pdf')
    - ETACCompiler.pdf
    - RunETAC_Licence.rtf
  - **System**
    - ETAC-to-BTAC.cmd
  - Compile ETAC (shortcut to 'ETAC-to-BTAC.cmd')
  - ETAC Compiler (shortcut)
  - ETACCompiler.chm
  - ETACCompiler.exe (contains the ETAC compiler)
  - Uninstall-ETACCompiler.exe
- **RunETAC** [a c] (**Run ETAC Scripts** installation)
  - **Data** [a c]
    - InclDirList.txt [a c]
    - RunETAC.ini [a w]

- **Documents** [a]
  - ETAC_Preliminaries.pdf [a]
  - ETACErrorCodes.pdf [a]
  - ETACOverview.pdf [a]
  - ETACProgLang(Official).pdf [a]
  - ETACVisualInteractionSystem.pdf [a]
  - FunctionsETACScriptLib.pdf [a]
  - PathScriptFnts.pdf [a]
  - RunETAC_Licence.pdf [c]
  - RunETAC_Licence.rtf
  - SplineScriptFnts.pdf [a]
  - VISPointSetFnts.pdf [a]
  - VISShapePathFnts.pdf [a]
- **Include** [a c]
  - TACGlobal.PTAC [a c]
  - TACSystemMessageDefs.TAC [a c]
  - TACWindowStyles.TAC [a c]
  - VISGlobal.PTAC [a] (includes TACWindowStyles.TAC)
- **Scripts**
  - **CheckETACFile**
    - CheckETACFile.btac (requires **ETAC Compiler**)
  - **DialogBoxMaker**
    - **Help**
      - DBMHelp.pdf
    - **Res**
      - DialogBoxMaker.res
    - DialogBoxMaker.btac
  - **DlgResViewer**
    - **Help**
      - DRVHelp.pdf
    - **Res**
      - DlgResViewer.res
    - DlgResViewer.btac
  - **DrawingPlaneToy**
    - **Help**
      - DPTHelp.pdf
    - **Res**
      - DrawingPlaneToy.res
    - DrawingPlaneToy.btac
  - **ETACCodeGenerator**
    - **Documents**
      - ECGTemplates_Licence.pdf
      - ETACCodeGenerator.pdf
      - ETACCodeGenTemplates.pdf
    - **HTMLHelp**
      - ETACCodeGen.chm
    - **Other**
      - ECGTdef.xml (for use with **Notepad++**)
    - **Res**
      - ETACCodeGen.res
      - ECGTFile.ico (can be used with template files)

```
|  |  |  Templates
|  |  |  |  ECGData
|  |  |  |  |  ExternTACLibECG.cpp
|  |  |  |  |  ExternTACLibECG.def
|  |  |  |  ECGTSourceFile.ecgt
|  |  |  |  CPPModsRec.ecgt
|  |  |  |  CPPSourceFiles.ecgt
|  |  |  |  DataFileReg.ecgt
|  |  |  |  ETACForApp.ecgt
|  |  |  |  ETACMainApp.ecgt
|  |  |  |  ETACModsRec.ecgt
|  |  |  |  ExternTACLib.ecgt
|  |  |  |  MakeEXE.ecgt
|  |  |  |  MakeExtractor.ecgt
|  |  |  ETACCodeGen.btac
|  |  |  ETACCodeGen.ini
|  |  |  MakeECGIni.cmd
|  |  ETACDemos
|  |  |  CalcDemo
|  |  |  |  CalcDemo.btac
|  |  |  FlowchartDemo
|  |  |  |  Data (empty)
|  |  |  |  Help
|  |  |  |  |  FDHelp.pdf
|  |  |  |  Images
|  |  |  |  |  Panel-1.bmp
|  |  |  |  |  Panel-2.bmp
|  |  |  |  Res
|  |  |  |  |  FlowchartDemo.res
|  |  |  |  |  Move4Way.cur
|  |  |  |  |  MoveCir.cur
|  |  |  |  |  MoveHor.cur
|  |  |  |  |  MoveVer.cur
|  |  |  |  |  PointCir.cur
|  |  |  |  FlowchartDemo.btac
|  |  InstallProjectFiles
|  |  |  Data
|  |  |  |  InstallProjectFiles.txt
|  |  |  Help
|  |  |  |  IPFHelp.pdf
|  |  |  Res
|  |  |  |  InstallProjectFiles.res
|  |  |  InstallProjectFiles.btac
|  |  InteractiveETAC
|  |  |  InteractiveETAC.btac
|  |  KeyCodeToy
|  |  |  KeyCodeToy.btac
|  |  KeywordArgsToy
|  |  |  Res
|  |  |  |  KeywordArgsToy.res
|  |  |  KeywordArgsToy.btac
|  |  MatrixObjToy
|  |  |  Help
|  |  |  |  MOTHelp.pdf
```

```
|  |  |  Res
|  |  |  |  MatrixObjToy.res
|  |  |  MatrixObjToy.btac
|  |  MseBtnEventToy
|  |  |  MseBtnEventToy.btac
|  |  ParseStringToy
|  |  |  Res
|  |  |  |  ParseStringToy.res
|  |  |  ParseStringToy.btac
|  |  ShapePathToy
|  |  |  Help
|  |  |  |  SPTHelp.pdf
|  |  |  Res
|  |  |  |  ShapePathToy.res
|  |  |  ShapePathToy.btac
|  |  VIEWToy
|  |  |  Help
|  |  |  |  VTHelp.pdf
|  |  |  Res
|  |  |  |  VIEWToy.res
|  |  |  VIEWToy.btac
|  |  VISTutor
|  |  |  Data
|  |  |  |  MenuItem.bmp
|  |  |  |  PathFntsRTF.rtf
|  |  |  |  Prefs.txt
|  |  |  |  PTSFntsRTF.rtf
|  |  |  |  RunETAC.ico
|  |  |  |  SPFFntsRTF.rtf
|  |  |  |  SplineFntsRTF.rtf
|  |  |  |  Tutorm.rtf
|  |  |  |  TutProgm.rtf
|  |  |  |  TutProgm.txt
|  |  |  |  VISAPIFntsRTF.rtf
|  |  |  |  VISCompDefsRTF.rtf
|  |  |  VISTutor.btac
|  ETACLibraries
|  |  Functions
|  |  |  etacFunctions.etac
|  |  PathFunctions
|  |  |  etacPathFunctions.etac
|  |  SplineFunctions
|  |  |  etacSplineFunctions.etac
|  System [a]
|  |  ETAC.tac
|  |  RunETAC.btac [a]
|  |  RunTACFiles.btac
|  |  RunETAC.cmd
|  |  visETAC.btac [a]
|  |  visETAC-D.btac [a]
|  Templates [a]
|  |  ECGTdef.xml (used with Notepad++)
|  |  ETACdef.xml [a] (used with Notepad++)
|  |  ETACFILE1.etac (template for 'New' ETAC text script files)
```

| | FunctionList.xml [a] (used with **Notepad++**)

| Run ETAC Scripts (shortcut to 'RunTACFiles.btac')
| RunETAC Info (shortcut to 'RunETAC.cmd')
| RunETAC.chm
| RunETAC.exe (contains the ETAC interpreter)
| Syntax Check ETAC File (shortcut, exists only if there are no Start Menu shortcuts)
| Uninstall-RunETAC.exe
| VIS Tutor (shortcut to 'VISTutor.btac')
| *ExternTACLibs.dll* (*external TAC libraries*)

System [a c r]
| ErrorMessages.dll [a c r]

a Indicates folders and files that are also installed or used by **ETAC for Applications** (AppETAC).
c Indicates folders and files that are also installed or used by **ETAC Compiler** (ETACCompiler).
r Indicates folders and files that are also installed or used by **Run ETAC Scripts** (RunETAC).
w Indicates files that are also installed in the system Windows directory.

A.3 ETAC for Applications Distribution Installation

Below is the directory tree structure produced by the distribution installation of **ETAC for Applications**. The programmer-created main application program, and any required *external TAC libraries*, need to be placed at the top level of this directory structure for distribution to a customer. Other programmer-created files used with the main application program also need to be placed in this structure. The customer need not have **Run ETAC Scripts** installed.

AppETAC Distribution (can be renamed)
RunETAC
| **Data**
| | InclDirList.txt

| **Documents**
| | AppETAC_Licence.pdf
| | AppETAC_Licence.rtf

| **Include**
| | TACGlobal.PTAC
| | TACSystemMessageDefs.TAC
| | TACWindowStyles.TAC
| | VISGlobal.PTAC

| **System**
| | RunETAC.btac

AppETAC.dll (contains the ETAC interpreter)
ErrorMessages.dll
RunETAC.ini
Application.exe (application program for customer)
ExternTACLibs.dll (*external TAC libraries* for customer)

A.4 ETAC Source Files Installation

Below is the directory tree structure produced by the **ETAC Source Files** installation. The 'ETACDevelopment *version*' directory may be renamed or moved to a different location, but the directory tree structure must be preserved. *version* indicates the version identification of the installation.

ETACDevelopment *version* (can be renamed; run 'SetNewLoc.etac' after renaming)
Data (empty)
Documents
| ETACSource_*version*.pdf

```
| ETACSource_Licence.pdf
| ETACSource_Licence.rtf
ETACApps
| CheckETACFile
| | Release
| | | CheckETACFile.btac
| | CheckETACFile.etac
| | CheckETACFileR.ecarg
| DialogBoxMaker
| | Help
| | | DBMHelp.pdf
| | Inc
| | | DBM_Resource.etac
| | Release
| | | DialogBoxMaker.btac
| | Res
| | | DialogBoxMaker.res
| | DialogBoxMaker.etac
| | DialogBoxMakerR.ecarg
| DlgResViewer
| | Help
| | | DRVHelp.pdf
| | Inc
| | | DRV_Resource.etac
| | Release
| | | DlgResViewer.btac
| | Res
| | | DlgResViewer.res
| | DlgResViewer.etac
| | DlgResViewerR.ecarg
| DrawingPlaneToy
| | Help
| | | DPTHelp.pdf
| | Inc
| | | DialogBoxMgr.etac
| | | DPT_Resource.etac
| | | DrawingMgr.etac
| | | MonitorMgr.etac
| | Release
| | | DrawingPlaneToy.btac
| | Res
| | | DrawingPlaneToy.res
| | DrawingPlaneToy.etac
| | DrawingPlaneToyR.ecarg
| ETACCodeGenerator
| | Documents
| | | ECGTemplates_Licence.pdf
| | | ETACCodeGenerator.pdf
| | | ETACCodeGenTemplates.pdf
| | HTMLHelp
| | | ETACCodeGen.chm
| | Inc
| | | CGActivationStages.etac
| | | CGArguments.etac
| | | CGCommands.etac
| | | CGFiles.etac
```

```
|  |  |  CGFunctionDefs.etac
|  |  |  CGFunctions.etac
|  |  |  CGGenerator.etac
|  |  |  CGHeader.etac
|  |  |  CGInputBox.etac
|  |  |  CGInstructions.etac
|  |  |  CGLogFile.etac
|  |  |  CGReturnCodeDefs.TAC
|  |  |  CGScript.etac
|  |  |  CGSpecialSymbols.etac
|  |  |  CGSymbols.etac
|  |  |  CGSyntaxCheck.etac
|  |  |  IB_DISDefs.etac
|  |  |  IB_Resource.TAC
|  |  Other
|  |  |  ECGTdef.xml (for use with Notepad++)
|  |  Release
|  |  |  ETACCodeGen.btac
|  |  Res
|  |  |  ETACCodeGen.res
|  |  |  ECGTFile.ico (can be used with template files)
|  |  Templates
|  |  |  ECGData
|  |  |  |  ExternTACLibECG.cpp
|  |  |  |  ExternTACLibECG.def
|  |  |  ECGTSourceFile.ecgt
|  |  |  CPPModsRec.ecgt
|  |  |  CPPSourceFiles.ecgt
|  |  |  DataFileReg.ecgt
|  |  |  ETACForApp.ecgt
|  |  |  ETACMainApp.ecgt
|  |  |  ETACModsRec.ecgt
|  |  |  ExternTACLib.ecgt
|  |  |  MakeEXE.ecgt
|  |  |  MakeExtractor.ecgt
|  |  ETACCodeGen.etac
|  |  ETACCodeGen.ini
|  |  ETACCodeGenR.ecarg
|  |  MakeECGIni.cmd
|  ETACDemos
|  |  CalcDemo
|  |  |  Release
|  |  |  |  CalcDemo.btac
|  |  |  CalcDemo.etac
|  |  |  CalcDemoR.ecarg
|  |  FlowchartDemo
|  |  |  Data (empty)
|  |  |  Help
|  |  |  |  FDHelp.pdf
|  |  |  Images
|  |  |  |  Panel-1.bmp
|  |  |  |  Panel-2.bmp
|  |  |  Inc
|  |  |  |  AboutBox.etac
|  |  |  |  CCPExpMgr.etac
|  |  |  |  CoreData.etac
|  |  |  |  DialogBoxMgr.etac
```

```
|  |  |  DrawingMgr.etac
|  |  |  FD_Resource.etac
|  |  |  FileAccess.etac
|  |  |  FlowpathObjMgr.etac
|  |  |  FrameMgr.etac
|  |  |  GridMgr.etac
|  |  |  HistoryMgr.etac
|  |  |  MenuDefs.TAC
|  |  |  Panel1Mgr.etac
|  |  |  Panel2Mgr.etac
|  |  |  SymbObjMgr.etac
|  |  Release
|  |  |  FlowchartDemo.btac
|  |  Res
|  |  |  FlowchartDemo.res
|  |  |  Move4Way.cur
|  |  |  MoveCir.cur
|  |  |  MoveHor.cur
|  |  |  MoveVer.cur
|  |  |  PointCir.cur
|  |  FlowchartDemo.etac
|  |  FlowchartDemoR.ecarg
|  InstallProjectFiles
|  |  Data
|  |  |  InstallProjectFiles.txt
|  |  Help
|  |  |  IPFHelp.pdf
|  |  Inc
|  |  |  IPF_Resource.etac
|  |  Release
|  |  |  InstallProjectFiles.btac
|  |  Res
|  |  |  InstallProjectFiles.res
|  |  InstallProjectFiles.etac
|  |  InstallProjectFilesR.ecarg
|  InteractiveETAC
|  |  Release
|  |  |  InteractiveETAC.btac
|  |  InteractiveETAC.etac
|  |  InteractiveETACR.ecarg
|  KeyCodeToy
|  |  Release
|  |  |  KeyCodeToy.btac
|  |  KeyCodeToy.etac
|  |  KeyCodeToyR.ecarg
|  KeywordArgsToy
|  |  Inc
|  |  |  KAT_Resource.etac
|  |  Release
|  |  |  KeywordArgsToy.btac
|  |  Res
|  |  |  KeywordArgsToy.res
|  |  KeywordArgsToy.etac
|  |  KeywordArgsToyR.ecarg
|  MatrixObjToy
|  |  Help
```

```
|  |  |  MOTHelp.pdf
|  |  Inc
|  |  |  MOT_Resource.etac
|  |  Release
|  |  |  MatrixObjToy.btac
|  |  Res
|  |  |  MatrixObjToy.res
|  |  MatrixObjToy.etac
|  |  MatrixObjToyR.ecarg
|  MseBtnEventToy
|  |  Release
|  |  |  MseBtnEventToy.btac
|  |  MseBtnEventToy.etac
|  |  MseBtnEventToyR.ecarg
|  ParseStringToy
|  |  Inc
|  |  |  PST_Resource.etac
|  |  Release
|  |  |  ParseStringToy.btac
|  |  Res
|  |  |  ParseStringToy.res
|  |  ParseStringToy.etac
|  |  ParseStringToyR.ecarg
|  RunETAC
|  |  Release
|  |  |  RunETAC.btac
|  |  |  visETAC.btac
|  |  |  visETAC-D.btac
|  |  RunETAC.etac
|  |  RunETACR.ecarg
|  |  visETAC.etac
|  |  visETAC-DR.ecarg
|  |  visETACR.ecarg
|  RunTACFiles
|  |  Release
|  |  |  RunTACFiles.btac
|  |  RunTACFiles.etac
|  |  RunTACFilesR.ecarg
|  ShapePathToy
|  |  Help
|  |  |  SPTHelp.pdf
|  |  Inc
|  |  |  SPT_Resource.etac
|  |  Release
|  |  |  ShapePathToy.btac
|  |  Res
|  |  |  ShapePathToy.res
|  |  ShapePathToy.etac
|  |  ShapePathToyR.ecarg
|  VIEWToy
|  |  Help
|  |  |  VTHelp.pdf
|  |  Inc
|  |  |  VT_Resource.etac
|  |  Release
|  |  |  VIEWToy.btac
```

```
|   |  Res
|   |  |  VIEWToy.res
|   |  VIEWToy.etac
|   |  VIEWToyR.ecarg
|  VISTutor
|   |  Data
|   |  |  MenuItem.bmp
|   |  |  PathFntsRTF.rtf
|   |  |  Prefs.txt
|   |  |  PTSFntsRTF.rtf
|   |  |  RunETAC.ico
|   |  |  SPFFntsRTF.rtf
|   |  |  SplineFntsRTF.rtf
|   |  |  Tutorm.rtf
|   |  |  TutProgm.rtf
|   |  |  TutProgm.txt
|   |  |  VISAPIFntsRTF.rtf
|   |  |  VISCompDefsRTF.rtf
|   |  Inc
|   |  |  AboutBox.etac
|   |  |  DrawingMgr.etac
|   |  |  FileAccess.etac
|   |  |  FrameMgr.etac
|   |  |  MenuDefs.TAC
|   |  |  Panel1Mgr.etac
|   |  |  ReferenceMgr.etac
|   |  Release
|   |  |  VISTutor.btac
|   |  VISTutor.etac
|   |  VISTutorR.ecarg
ETACLibraries
|  CreateDlgRes
|   |  CreateDlgRes.etac
|   |  CreateDlgRes.ptac
|  MemLook
|   |  MemLook.etac
|   |  MemLook.ptac
|  TextStringArray
|   |  etacTextStringArray.etac
|   |  etacTextStringArray.ptac
|  ReadMe.txt
ETACSystems
|  VisualInteractionSystem
|   |  VISAPIFnts.etac
|   |  VISAPIPrivate.etac
|   |  VISCompDefs.etac
|   |  VISCompNewFnts.etac
|   |  VISDefs.TAC
|   |  VISErrCodes.TAC
|   |  VISEventHndlrs.etac
|   |  VISInclFiles.etac
|   |  VISPointSetFnts.etac
|   |  VISShapePathFnts.etac
|   |  VISTypes.TAC
General
|  CompileTACGlobal.ecarg
```

| CompileVISGlobal.ecarg
| SetNewLoc.etac (must be run after installation)

Include

| DebugCmds.etac
| ETACDefs.etac
| ETACLibDefs.ptac
| GISUsrCmds.ptac
| GISPrivDefs.TAC
| GISUsrDefs.TAC
| TACGeneralIncl.TAC
| TACSystemDefs.TAC
| TACWindowStyles.TAC
| VISUsrCmds.ptac
| VISUsrDefs.TAC

ReadMe_*version*.txt

Glossary

E

ETAC binary file
A file containing a binary form of *ETAC text script*. An *ETAC binary file* typically has an extension of `btac`.

ETAC code
Any code executable by the ETAC interpreter. A file containing *ETAC code* typically has an extension of etac, tac, ptac, or btac.

ETAC text script
ETAC program code that is in human readable and writable text form. A file containing *ETAC text script* typically has an extension of etac (or tac if the file contains only TAC text script).

Note that the term "ETAC text script" is used in the same sense as the word "code", as in "ETAC text script code".

external TAC library
A library of functions implemented by a programmer in the C++ programming language to extend the functionality of the ETAC programming language. The functions exist in a **Windows**® DLL (dynamic linked library), but are used as commands or ETAC functions by the ETAC programmer.