

Guidance Automation Toolkit

Using the patterns & practices of the Guidance Automation Toolkit, you can make reusable code and pattern assets directly available in Visual Studio 2005.

The toolkit is designed to simplify integrating reusable code into applications allowing architects to automate development activities that developers would usually have to perform manually; often by following a series of instructions. By using the toolkit, architects can also ensure that repetitive and often error-prone activities are performed in a consistent manner, streamlining and accelerating the development process.

The toolkit can be used with assets developed in-house or by third parties; such as the assets created by the Microsoft patterns & practices team. These assets can be exposed to developers within Visual Studio, and in some cases, configured by using configuration files, templates, and wizards.

Guidance Automation Extension (GAX) and Guidance Automation Toolkit (GAT)

What are GAX and GAT anyway?

GAX and GAT are the foundation of Microsoft's Software Factories initiative. Software Factories built on these technologies are collections of guidance that help architects and developers build specific types of applications with improved consistency, quality and productivity. This is achieved by integrating *automated guidance* related to the factory's application scenario deeply into Visual Studio - for example, using templates, wizards, recipes and code generation, along with supporting patterns and architectural documentation. The patterns & practices team is currently working on several Software Factories, including the Web Service Software Factory, Smart Client Software Factory and Mobile Client Software Factory.

The Guidance Automation Extensions (GAX) extends Visual Studio 2005 to provide the core runtime environment for the *guidance packages* included in these factories. GAX allows you to install and enable a guidance package for a Visual Studio Solution, and it will add the appropriate templates, recipes and wizards to the development environment to make it easy for you to complete tasks, such as adding a service interface or business entity to your web service solution. The new version of GAX also includes a new window called the Guidance Navigator which makes it easy to discover the available guidance and read any related documentation. You must have GAX installed before you can use any guidance packages.

The Guidance Automation Toolkit (GAT) provides a simple guidance package that lets you author new guidance packages or customizes existing guidance packages. This is extremely important, since even though we are working hard to make our Software Factories as relevant as possible, each organization and project is different - so by customizing the guidance packages you can ensure that they fully meet your requirements and comply with your architecture and environment. You do not need GAT installed to use a guidance package, but over time it's likely you'll want to customize something so it's definitely worth installing now.

Comparison table for application having 50 database tables:-

Development	Manually		Using GAT	
	Man days	Errors	Man Days	Errors
Business Objects	5	Chances of errors	1	Error prone
CRUD (Create, Read, Update, Delete) Procedures	10	Chances of errors	3	Error prone
Data Repository classes to map business objects into database objects and vice a versa	10	Changes of errors	3	Error prone

Some disadvantages of GAT:-

- Changes in database after development don't get effect in code. We have to code it again using GAT or manually.
- As mentioned above it is add-on with Microsoft Visual Studio 2005. It can be only used with Visual Studio 2005.