

FUJITSU Software INTARFRM Professional Edition Application Framework



Lifecycle-oriented Professional Edition

Application Framework of Fujitsu that achieves long-term operation of application corresponding to changes in business according to "Automated Development Process" and "Compatible Asset Management".

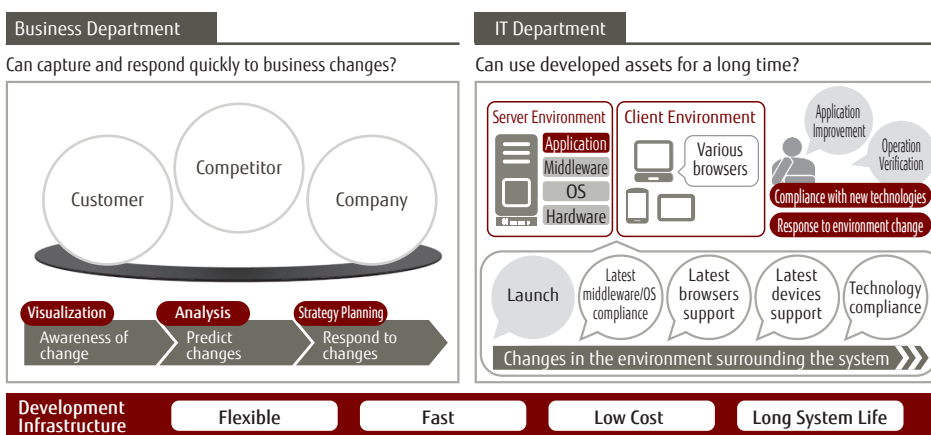
To a growing system that can be used for a long time

Application framework that supports ICT systems evolving with customer's business

FUJITSU Software INTARFRM (hereinafter referred to as INTARFRM) Professional Edition is an application framework that supports software design, development, operation, and maintenance. Consistently corresponds to the software lifecycle from design to maintenance and will certainly support customer's continuously growing ICT system.

Strong ICT Infrastructure Necessary For "Business Change" and "Environment Change"

ICT systems must to be able to respond quickly and flexibly to business and environmental changes. Moreover, being able to reuse previously developed assets is also an important point of an ICT system.



Responding promptly to changes in the business is an important point directly connected to the growth of companies. For that reason, improvement of ICT systems are necessary.

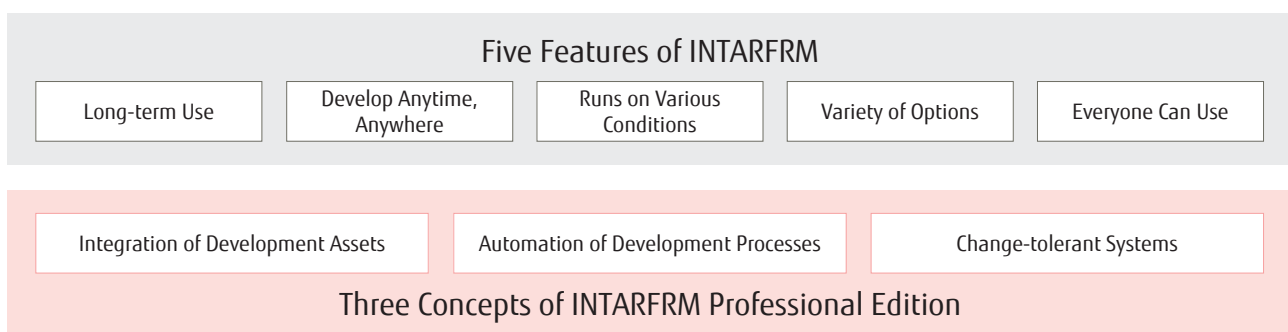
Also, environments supporting ICT systems change over time.

A system configuration that is not susceptible to these changes is needed in order to operate in those environments.

A stable development infrastructure (application framework) is necessary to create an ICT system that can cope with "Business Change" and "Environment Change".

Five Features of INTARFRM and the Professional Edition Concept


INTARFRM Professional Edition supports five features of INTARFRM by three concepts. Based on these three concepts, a mechanism that comprehensively covers the customer's system lifecycle is provided.



INTARFRM Professional Edition Concepts

Three Concepts of INTARFRM Professional Edition


An application framework that supports ICT infrastructure with high quality and high speed development process.



Integration of Development Assets

Manages consistency between design information, source codes, and test specifications.


- Eliminate design and production omissions/inconsistencies/ambiguities and support **high quality** system development
- Continue accumulation of know-hows, supporting **long-term** system development



Automation of Development Processes

Provides standardized development process by incorporating automation.

- Achieve **high quality** and **efficient** system development
- Establish high speed development style and **prompt** release



Change-tolerant Systems

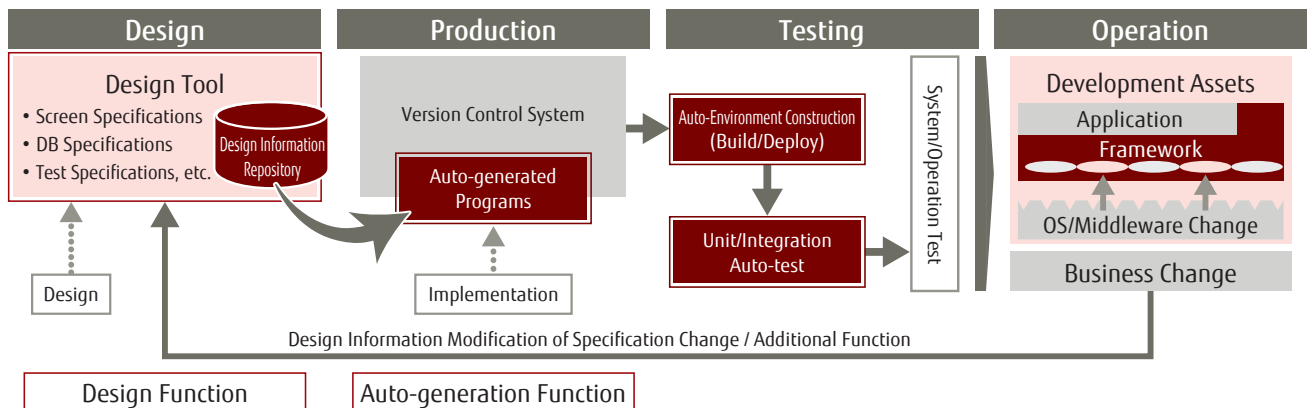
The framework absorbs the changes in the environment surrounding the system.

- Catch up with operating environment and technology trends for **longer** system life
- Flexible** and **fast** response to specification changes due to business change



Development Process of INTARFRM Professional Edition that achieves Three Concepts

Maximize automation of design, production and test phases and provide a development process with enhanced development quality and efficiency.



Guarantee design information integrity and completeness
Efficiently manage assets and perform design using the design tool. Improve the design quality by creating designs without omissions, inconsistencies and ambiguities.



Centralized Management of Assets



Improvement of Traceability



Flexible Specification Change

Improve development quality and efficiency
Auto-generate programs based on the design information. Perform systematic and high quality asset management by connecting to a VCS^{*1}.



Auto-generation of Source Codes



Multiple components that supports implementation



Substantial improvement of development quality and efficiency

Respond to changes in the environment
The framework absorbs environmental changes (OS/middleware/browsers), thereby achieving long-term operation.



Absorb changes in OS/Middleware




Long-term Operation




Reduction of Operating Costs


Automation of test execution
Provide support for CI^{*2} to achieve test automation. Automation enables fast and high-quality tests.



Ensure Test Quality



Prevent work leaks and mistakes



Execute large amount of test data at high speed

*1 VCS: Version Control System *2 CI: Continuous Integration

Professional Edition's Design Function

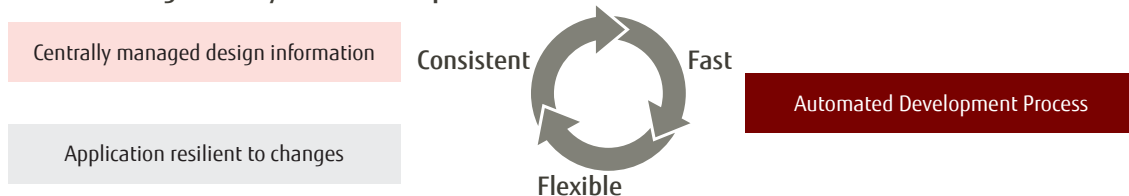
INTARFRM Professional Edition Design Facility Base aids the application design process and manages the design information throughout the software lifecycle.

Long-term System Development Support by Managing Design Information in Repository

In an enterprise system development, maintainability of developed assets is an important requirement.

- By keeping the design information necessary for application development centralized in the repository, **design information can be managed continuously while maintaining its integrity over time.**
- By auto-generating source codes based on the design information and automatically creating and executing the test environment, **the development process can be executed quickly.**
- By having a centrally managed design information and automated development process, **developed systems can be used for a long time** and can quickly and flexibly respond to business change while maintaining integrity of data.

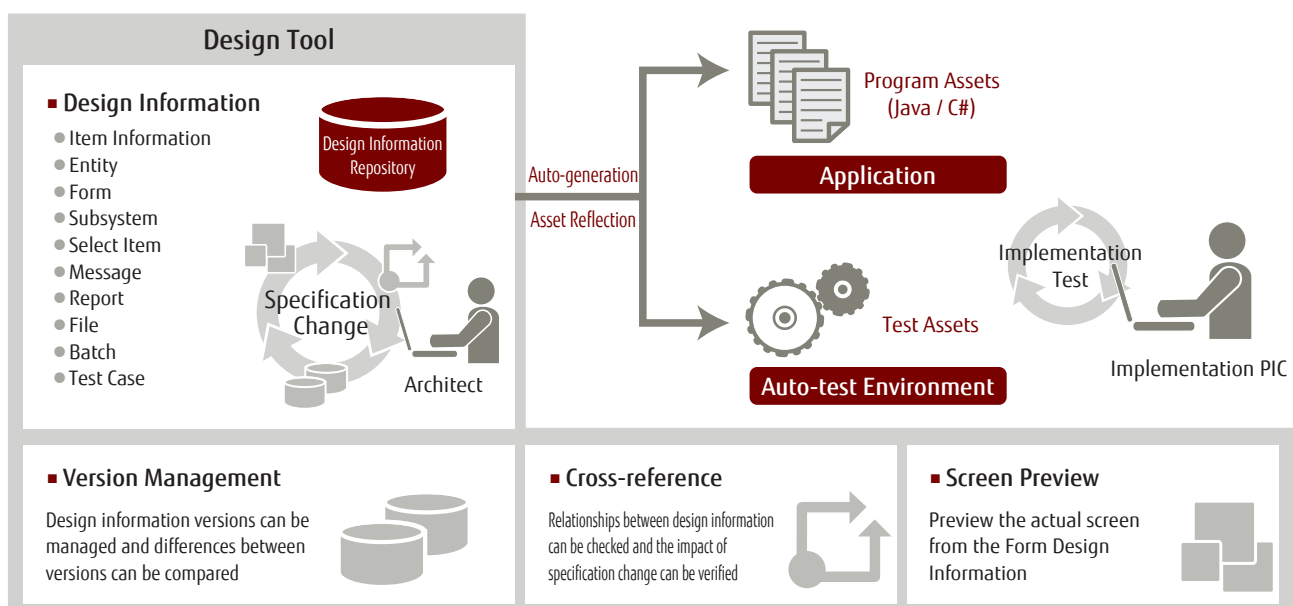
Mechanism for Long-term System Development



Flexibility of Specification Change by Maintaining Integrity of Design Information

The integrity of design information and program assets / test assets is guaranteed by the Design Tool and the Development Process.

- Investigation of the impact in the specification change is enabled with the Design Tool. This prevents work leaks and mistakes, thereby improving the development quality.
- Changes are immediately reflected to the application and the test environment by the automated development process, and can take the integrity of the entire development assets.




Auto-generation Function and Development Process

In INTARFRM Professional Edition Development Facility, source codes are automatically generated based on the entered design information in the design tool.

Create an Application With Functions Necessary For Enterprise Systems

Auto-generate source codes contain necessary functions (input check, format conversion, etc.) for an enterprise system and developers can easily develop applications by adding business logic.

Application Type



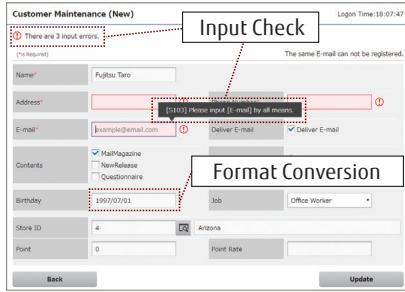
Web / Windows Application

Multi-device
Multi-browser

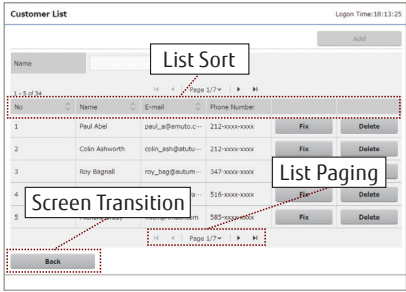
Java
C#

Example of Auto-generated Application *Screens for PC / Tablet

Input Screen



List Screen



Common Functions Provided

- Security Measures (XSS¹, CSRF² Countermeasure)
- Session Management Component
- DB Access Component

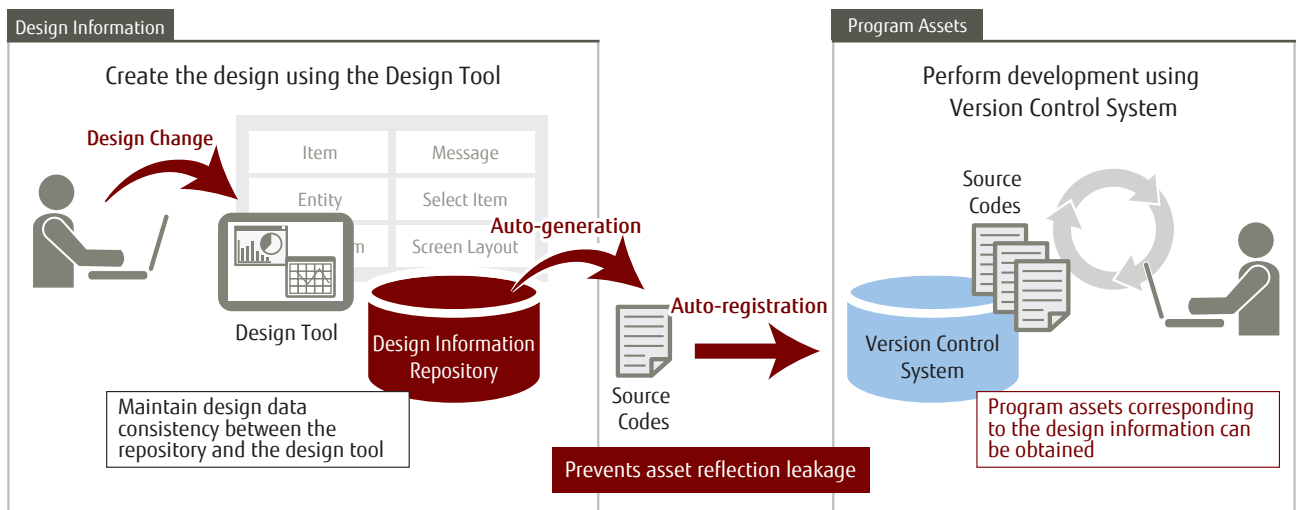
Built-in Functions

- Input Check
- Multi-language Switch
- Transition using Enter Key
- List Sort
- Screen Transition
- Format Conversion
- Search Sub-dialog
- List Paging

Manage Development Assets by Connecting to a Version Control System

Professional Edition's asset management not only controls design information managed by the repository but also manages auto-generated program assets linked to a version control system.

- Automatically registering auto-generated program assets in the version control system prevents reflection of the design information for the program asset from being omitted. This makes it possible to maintain consistency between design information and program assets, thereby improving the quality of asset management.



*1 XSS: Cross-site Scripting *2 CSRF: Cross-site Request Forgery

Other Functions

Optimize Development Using Various Functions

The design tool has necessary functions for developing an application, thereby improving the efficiency of the development process and the quality of the application.



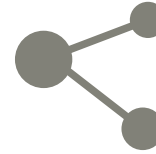
Auto-generation of Design Documents

Design information can be printed out in an Excel file.



ER Diagram

Entity relationships can be visually designed and confirmed.



WebAPI

Design information can be registered from an external program.



Status Management

Status of the design information can be set and confirmed.



Change History Of Design Information

Change history of the design information can be viewed.



Layout Design

Application's screen layout can be visually designed.



Dashboard

Work progress and test execution results can be confirmed.



Internationalization

Screen resources for each language can be managed.



Backup

Design information can be backed up and restored.

About the Product

Products

Function	Product	License Unit	Development Language
Design Support Function (Design Facility)	Base V16	1 User	-
	Base PLUS V16 *1	1 User	-
Development Support Function (Development Facility)	Web Application Java Servlet V16	1 Client	Java
	Web Application Visual C# V16	1 Client	C#
	Smart Client Visual C# V14	1 Client	-
Execution Function (Runtime)	Web Application Java Servlet V16	1 Processor (CPU Core)	-
	Web Application Visual C# V16	1 Processor (CPU Core)	-
	Smart Client Visual C# V14	1 Processor (CPU Core)	-

*1 Base PLUS V16 is only supported in Web Application Java Servlet and Web Application Visual C#.

Required Software/Operating Environment^{*1}

		Required Software	OS / Hardware ^{*2}
Base V16			
Design Support Function (INTARFRM Design Facility Base / Base PLUS)			
Repository Server	<ul style="list-style-type: none"> Java SE SDK 8 (1.8.0 and above) GlassFish 4.1.1 and above PostgreSQL 9.4.4 and above 		<ul style="list-style-type: none"> OS : Windows Server 2012 SP1 / 2012 R2 / 2016 Memory : 8GB or more is recommended HDD : 2GB or more available hard disk space
Design Client	<ul style="list-style-type: none"> Microsoft Internet Explorer 11 (Desktop version) Microsoft Edge 38^{*3} Google Chrome 42^{*3} Mozilla Firefox ESR 45.4^{*3} 		<ul style="list-style-type: none"> OS : Windows 7 SP1 / 8.1 / 10 Memory : 2GB or more is recommended HDD : 150MB or more available hard disk space Recommended Resolution : 1364 x 768 or more
Web Application Java Servlet V16 / Visual C# V16			
		Java Servlet V16	Visual C# V16
Development Support Function (INTARFRM Development Facility)			
Development Client ^{*4}	<ul style="list-style-type: none"> Java SE JDK 7 (1.7.0_21 and above), Java EE 6 / Java SE JDK 8 (1.8.0_51 and above), Java EE 7 jQuery 1.10.2 / 1.11.2 jQuery UI 1.10.3 / 1.11.2 jQuery Mobile 1.4.0 / 1.4.5 Globalize 0.1.1 	<ul style="list-style-type: none"> Microsoft .NET Framework 4.5 ASP.NET MVC 4 jQuery 1.10.2 / 1.11.2 jQuery UI 1.10.3 / 1.11.2 jQuery Mobile 1.4.0 / 1.4.5 Globalize 0.1.1 Microsoft VisualStudio 2012 / 2013 / 2015 	<ul style="list-style-type: none"> OS : Windows 7 SP1 / 8.1 / 10 Memory : 2GB or more is recommended HDD : 150MB or more available hard disk space
Execution Function (INTARFRM Runtime)			
Operation Server	<ul style="list-style-type: none"> Java SE JDK 7 (1.7.0_21 and above), Java EE 6 / Java SE JDK 8 (1.8.0_51 and above), Java EE 7 jQuery 1.10.2 / 1.11.2 jQuery UI 1.10.3 / 1.11.2 jQuery Mobile 1.4.0 / 1.4.5 Globalize 0.1.1 Any of the following application servers: <ul style="list-style-type: none"> - Fujitsu Interstage Application Server V11.1 - GlassFish Server 3.x / 4.x - Apache Tomcat 7.0x / 8.0x - Oracle WebLogic Server 12c (12.1.3) - IBM WebSphere Application Server V8.5 	<ul style="list-style-type: none"> Microsoft .NET Framework 4.5 ASP.NET MVC 4 jQuery 1.10.2 / 1.11.2 jQuery UI 1.10.3 / 1.11.2 jQuery Mobile 1.4.0 / 1.4.5 Globalize 0.1.1 Microsoft Internet Information Services 7.5 / 8.0 / 8.5 / 10.0 	Comply with the hardware requirements of each application server. The following cloud environment is also supported: <ul style="list-style-type: none"> FUJITSU Cloud Service K5 / S5 Visual C# V16 Only The following cloud environment is also supported: <ul style="list-style-type: none"> FUJITSU Cloud Service A5 for Microsoft Azure^{*5}
Operation Client	Microsoft Internet Explorer 10 Microsoft Internet Explorer 11 (Desktop version) Microsoft Internet Explorer 11 (ModernUI version) Microsoft Edge 38 ^{*3} Google Chrome 51.0 ^{*3} Mozilla Firefox ESR 45.1 ^{*3} Android Standard Browser ^{*3} Mobile Safari ^{*3}		<ul style="list-style-type: none"> OS : Windows 7 SP1 OS : Windows 7 SP1 / 8.1 / 10 WindowsPC or tablet running on the following OS: <ul style="list-style-type: none"> OS : Windows 8.1 / RT 8.1 OS : Windows 10 OS : Windows 7 SP1 / 8.1 / 10 Tablet or smartphone running on the following OS: <ul style="list-style-type: none"> OS : Android 4.0 - 4.4 / 5.0 iPhone or iPad <ul style="list-style-type: none"> OS : iOS 8.1 / 8.4 / 9.0

*1 For the details on the required software and OS/hardware support period of each product, please refer to their corresponding product support policies. Please contact Fujitsu Sales or refer to "INTARFRM Operating Environment" section in the "Trial Version" page of the INTARFRM website for the latest information on the required software and operating environment of each Professional Edition's product.

*2 Client PC's memory and HDD (Disk Capacity) of a Windows 7 operating environment is described.

For HDD (disk capacity), it is the disk space required for product installation. A separate disk capacity is required to accommodate design-related information and developed assets.

*3 The browser version during operation check.

*4 Please prepare the integrated development environment (Interstage Studio, Eclipse, Visual Studio, etc.) as necessary.

*5 Only covers Cloud Services out of all the computing services available in FUJITSU Cloud Service A5 for Microsoft Azure.

Product Support

INTARFRM will support the product up to 10 years after product shipment so that customers can use it worry-free.

INTARFRM Introduction site



<http://www.fujitsu.com/jp/solutions/infrastructure/dynamic-infrastructure/afw/>
Check out the product features, operating environment, etc.

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