Appendix C

Industrial Application Server Glossary

Application

A collection of objects within a Galaxy Repository that performs an automation task. Synonymous with Galaxy. There may be one or more applications within a Galaxy Repository.

Application Engine (AppEngine)
A scan-based engine that hosts and executes the runtime logic contained within AutomationObjects.

ApplicationObject
An AutomationObject that represents some element of your application. This may include things such as (but not limited to) an automation process component (for instance, a thermocouple, pump, motor, valve, reactor, or tank) or associated application component (for instance, function block, PID loop, Sequential Function Chart, Ladder Logic program, batch phase, or SPC data sheet).

Application Views
The Applications Views pane displays the object-related contents of the Galaxy in three different ways: Model, Deployment, and Derivation Views. The Model View is the default display when the IDE is first opened.

ArchestrA
The distributed architecture for supervisory control and manufacturing information systems. It is an open and extensible technology based on a distributed, object-based design.

ArchestrA Object Toolkit
A programmer’s tool used to create new ApplicationObjects and Device Integration Object Templates, including their configuration and run-time implementations. Includes a developer tool used to build DI Objects and create unique Domain Objects that interact with DI Objects in the ArchestrA environment.

Area
A logical grouping of AutomationObjects that represents an area or unit of a plant. It is used to group related AutomationObjects for alarm, history, and security purposes. It is represented by an Area AutomationObject.

Area Object
The System Object that represents an Area of your plant within a Galaxy. The Area Object acts as an alarm concentrator, and is used to place other Automation Objects into proper context with respect to the actual physical automation layout.

Assignment
The designation of a host for an AutomationObject. For example, an AppEngine AutomationObject is assigned to a WinPlatform AutomationObject.

Attribute
An externally accessible data item of an AutomationObject.

Attribute Reference String
A text string that references an attribute of an AutomationObject.

AutomationObject
A type of object that represents permanent things in your plant (such as Application Objects or Device Integration Objects) as objects with user-defined, unique names within the Galaxy. It provides a standard way to create, name, download, execute, and monitor the represented component.

Automation Object Server (AOS)
A computer that hosts one or more application engines and associated automation objects. An Industrial Application Server Galaxy Namespace can contain several Automation Object Servers, each which requires a Platform.

Backup Application Engine
The object created by the ArchestrA infrastructure when the Primary object has been enabled for redundancy. See **Redundancy** for further detail.

Base Template
A root template at the top of a derived hierarchy. Unlike other templates, a base template is not derived from another template but developed with the Application Object Toolkit and imported into a Galaxy. Base templates and derived templates always have a $ before their name in the IDE.

Block Read Group
A DAGroup that is triggered by the user or another object. It reads a block of data from the external data source and indicates the completion status.

Block Write Group
A DAGroup that is triggered by the user or another object after all the required data items have been set. The block of data is then sent to the external data device. When the block write is complete, it indicates the completion status.

Bootstrap
The base ArchestrA service which is required on all ArchestrA computers. It provides the base software environment to enable a platform and allows a computer to be included in the Galaxy Namespace.

Change Log
The revision history that tracks the life cycle activities of ArchestrA Objects, such as object creation, check-in/check-out, deployment, and import/export.

Change Propagation
The ability to create templates which will allow each component template to support changes such that a change in one of the elements can be automatically propagated to all — or select, related — instances.

Check-In
IDE operation for making a configured object available for other users to Check-Out and use.

Check-Out
IDE operation for the purpose of editing an object. It makes the item unavailable for other users to Check-Out.

Checkpoint
The act of persisting to disk the configuration, state, and all associated data necessary to support automatic restart of a running AutomationObject. The restarted object has the same configuration, state, and associated data as the last checkpoint image on disk.

Compound Object.
An Application Object that contains at least one other Application Object.

Contained Name
An alternate naming convention that when combined with the tag name of the root container object, results in the Hierarchical Name. For instance, for a given object, it’s Hierarchical Name = Line1.Tank1.InletValve and its Contained Name= InletValve

Containment
The notion of hierarchical grouping that allows one or more AutomationObjects to exist within the name space of a parent AutomationObject and be treated like parts of the parent

AutomationObject. This functionality allows for relative referencing to be defined at the template and instance level.

DAGroup
A data access group associated with Device Integration Objects. It defines how communications is achieved with external data sources. It can be a ScanGroup, Block Read or Block Write groups.

DAServer Manager (DAS Manager)
The System Management Console (SMC) snap-in supplied by the DAServer that provides the required user interface for activation, configuration, and diagnosis of the DAServer.

Data Access Server (DAServer)
The server executable that handles all communications between field devices and client applications. Similar in function to I/O Servers but with more advanced capabilities.

Data Access Server Toolkit (DAS Toolkit)
A developer tool used to build Data Access Servers (DAServers).

Deployment
The operation which instantiates an automation object instance in the ArchestrA runtime. This action involves installing all the necessary software and instantiating the object on the target platform with the objects default attribute data from Galaxy Repository.

Deployment View
The part of the Applications View in the IDE that shows how objects are physically dispersed across Platforms, Areas and Engines. This is a view of how the application is spread across computing resources.

Derivation
The creation of a new Template based on an existing Template.

Derivation View
The part of the Applications View in the IDE that shows the parent-child relationship between base templates, derived templates and derived instances. A view into the genealogy of the application.

Derived Template
Any template with a parent template.

Device Integration Object (DIObjects)
An AutomationObject that represents the communication with external devices or software. DIObjects run on an Application Engine, and include DINetwork and DIDevice objects.

DIDevice Object
An object that represents the actual external device (for example, a PLC or RTU) that is associated with a DINetwork Object. It provides the ability to diagnose and browse data registers of the DAGroups for that device.

DINetwork Object
An object that represents the network interface port to the device via the Data Access Server or the object that represents the communications path to another software application. It provides diagnostics and configuration for that specific network card.

Engine Object
An ArchestrA system enabled object that contains Local Message Exchange and provides a host for Application objects, Device Integration objects and Area objects.

Event Record
The data that is transferred about the system and logged when a defined event changes state (for instance, an analog crosses its high level limit, an acknowledgement is made, or an operator logs in to the system).

Export
The act of generating a Package file (.aaPKG file extension) from persisted data in the Galaxy Database. The resulting .aaPKG file can be imported into another Galaxy through the IDE import mechanism.

FactorySuite Gateway
FactorySuite Gateway is a Microsoft Windows application program that acts as a communications protocol converter. Built with the ArchestrA DAS Toolkit, FS Gateway can be used to link clients and data sources that communicate using different data access protocals.

Galaxy
The entire application. The complete ArchestrA system consisting of a single logical name space (defined by the Galaxy Database) and a collection of Platforms, Engines and objects. One or more networked PC's that constitute an automation system. This is referred to as the Galaxy Namespace.

Galaxy Database
The relational database containing all persistent configuration information like Templates, Instances, Security, etc. in a Galaxy Repository.

Galaxy Database Manager
The Galaxy Database Manager is a utility you can use to manage your Galaxies. It can back up and restore Galaxies should they become corrupted or to reproduce a Galaxy on another computer. The Galaxy Database Manager is part of the System Management Console (SMC).

GalaxyObject
The object that represents a Galaxy.

Galaxy Repository
The software sub-system consisting of one or more Galaxy Databases.

Hierarchical Name
The name of the object in the context of its container object. For instance, Tank1.OutletValve, where an object called Tank1 contains the OutletValve object.

Historical Storage System (Historian)
The time series data storage system, used to compress and store high volumes of time series data for latter retrieval. For the Industrial Application Server, the standard Historian is IndustrialSQL Server.

Host
The parent instance of a child instance in the deployment view. (Example: a Platform instance is a Host for an AppEngine instance).

Import
The act of reading a .aaPKG File and using it to create AutomationObject instances and Templates in the Galaxy Repository.

Industrial Application Server
Refers to the FactorySuite A^2 Supervisory Control Platform, commonly known as the Application Server. The Industrial Application Server is sized by (a) the number of Workstation / Server Platforms, (b) by real I/O in the system, and (c) the number of Terminal Services sessions. The Application Server license is per Galaxy. An Application Server can be distributed across multiple computers as part of a single Galaxy Namespace. The Industrial Application Server is designed to leverage existing Wonderware products such as InTouch for visualization, Industrial SQL as its historian, and the device Integration product line (I/O Servers) for device communications. The Industrial Application Server uses InTouch v8.0 or InTouch View v8.0 for visualization with the addition of Platforms to the visualization node.

Instance
An object, which is a unique representation of a template that can exist in runtime.

Instantiation
The creation of a new object instance based on a corresponding Template.

Integrated Development Environment (IDE)
The Integrated Development Environment (IDE) is the user interface for the configuration side of Application Server. It is used to manage templates, create object instances, deploy and un-deploy objects and a host of other functions associated with the development and maintenance of the system. It is only available as part of the FactorySuite A2 Development License.

InTouch View
InTouch View Clients are InTouch Runtime Version 8.0 clients that solely use of the Industrial Application Server for its data source. In addition, standard InTouch v8.0 runtimes can leverage the Industrial Application Server with the addition of a Platform license.

I/O Count
Number of I/O points being accessed into the Galaxy. I/O points are real I/O and are not equivalent to InTouch tags. I/O count is based on the number of I/O points that are configured through an OPC Server, I/O Server, DA Server or InTouch Proxy Object, over the whole Application Server namespace, regardless of how many PCs are in the system.

Life Cycle Cost
The cost of a Supervisory Control System attributed to initial development, application changes and on-going maintenance. The Industrial Application Server reduces these costs through the use of a compnent object-based development environment and automated change propagation capabilities.

Live Mode
An action in ActiveFactory™ that enables the configuration of a Runtime application to be refreshed at a designated interval.

Log Viewer
A Microsoft Management Console (MMC) snap-in that provides a user interface for viewing messages reported to the LogViewer.

Message Exchange
The object to object communications protocol used by ArchestrA and the Industrial Application Server.

Model View
The part of the Applications View in the IDE that shows how objects are arranged to describe the physical layout of the plant and supervisory process being controlled.

Object
Any template or instance found in a Galaxy Database. A common characteristic of all objects is they are stored as separate components in the Galaxy Repository.

Object Extensions
The capability to add additional functions to an Automation Object while not altering the objects original behavior. Can be added to derived templates and object instances. They include Scripts, User Defined Attributes (UDAs) and Attribute Extensions.

Object Viewer
A utility in which you can view the attribute values of the selected object in run-time. This utility is only available when an object is deployed. Object Viewer provides the user with diagnostic information on Application Objects for the purpose of detecting performance parameters, resource consumption and reliability measurements. In addition to viewing an object’s data value, data quality and the communication status of the object, you can also modify some of it’s attributes for

diagnostic testing. Modifications can include adjusting timing parameters and setting objects in an execution or idle mode.

OffScan
The state of an Object that indicates it is idle and not ready to execute its normal runtime processing.

OnScan
The state of an Object in which it is performing its normal runtime processing based on a configured schedule.

Package Definition File (.aaPDF)
The standard description file that contains the configuration data and implementation code for a base template. File extension is .aaPDF.

Package File (.aaPKG)
The standard description file that contains the configuration data and implementation code for one or more object instances or Templates. File extension is .aaPKG.

Platform Count
Number of PCs in the Galaxy. Each Workstation and/or Server communicating directly with the Application Server requires a platform to be part of the Galaxy Namespace. This includes each InTouch 8.0 or higher and InTouch View 8.0 or higher client. Each InTouch Terminal Services Session needs IAS Terminal Services Session License. A Platform License includes a per seat FSCAL2000 with Microsoft 2000 SQL Server CAL. Stand-alone computers that only host InSQL Servers or remote DA Servers do not need a platform license.

Platform Manager
The Platform Manager provides Galaxy application diagnostics by allowing you to view the run-time status of some system objects and to perform actions upon those objects. Actions include setting platforms and engines in an executable or idle mode and starting and stopping platforms and engines. This utility is an extension snap-in to the ArchestrA System Management Console (SMC).

Platform Object
An object that represents a single computer in a Galaxy, consisting of a system wide message exchange component and a set of basic services. This object hosts all Application Engines.

PLC
Programmable logic controller.

Properties
Data common to all attributes of objects, such as name, value, quality, and data type.

Proxy Object
A Proxy Objects is an Automation Object that represents an actual product for the purpose of device integration with the Industrial Application Server or InTouch® HMI. For example, there is a Proxy Object that enables the Industrial Application Server to access an OPC server.

Redundancy

During Configuration

- Primary object: The object intended as the main or central provider of the functionality in the run-time. For AppEngines, it is the object you enable for redundancy. For data acquisition, it is the DIObject you intend to use first as your data source in the run-time.
- Backup object: The object that provides the functionality of the Primary object when it fails. For AppEngines, it is the object created by the ArchestrA infrastructure when the Primary

object has been enabled for redundancy. For data acquisition, it is the DIObject you do not intend to use first as your data source in the run-time.

During Run-Time

- Active object: The object that is currently executing desired functions. For AppEngines, it is the object that is hosting and executing ApplicationObjects. For data acquisition, it is the object that is providing field device data through the RedundantDIObject.
- Standby object: The passive object; that is, it is waiting for a failure in the Active object's condition or for a force-failover. For AppEngines, it is the object that monitors the status of the Active AppEngine. For data acquisition, it is the object that is not providing field device data through the RedundantDIObject.

Redundant DI Object
The RedundantDIObject monitors and controls the redundant DIObject data sources. Unlike redundant AppEngines, individual DIObject data sources do not have redundancy-related states. For all intents and purposes, they function as standalone objects.

Reference
A string that refers to an object or to data within one of its attributes.

Relational Reference
A reference to an object's attributes that uses a keyword in place of an object's tagname. These keywords allow a reference to be made by an object's relationship to the target attribute. Examples of these keywords are "Me", "MyPlatform", and "MyContainer".

Remote Reference
The ability to redirect ArchestrA object references or references to remote InTouch tags. The new script function used to redirect remote references at runtime is IOSetRemoteReferences.

Runtime
The InTouch® (WindowViewer™) function that provides the viewing of data from the configuration of the application in InTouch development (WindowMaker).

Scan Group
A DAGroup that requires only the update interval be defined and the data will be retrieved at the requested rate.

Scan State
The Scan State of an object in run-time. This can be either off-scan or on-scan.

Security
Industrial Application Server security is applied to IDE, SMC, and the runtime data level. At the runtime data level which centralizes the definition of all permissions to the ApplicationObjects. These ApplicationObjects can be accessed by a variety of clients but the security is centrally defined allowing ease of maintenance. The users that are allowed to modify these ApplicationObjects at runtime are mapped to the objects by user defined roles. These roles can be mapped directly to existing groups in a Microsoft Domain or workgroup.

SmartSymbols
SmartSymbols are objects that integrate object-oriented technology with InTouch graphics to transform them into reusable templates. Changes made to the templates automatically propagate throughout an application – even across multiple networked PC nodes. They are created from a graphic in an InTouch window that has been made into a cell and converted into a SmartSymbol. In addition, libraries of SmartSymbols can be exported to other applications and plants, enabling companies to standardize on graphics throughout the entire organization.

System Management Console (SMC)
The central runtime system administration/management user interface in which all required runtime administration functions can be accomplished.

System Objects
Objects that represent an Area, Platform or Engine.

TagName
The unique name given to an object. For instance, for a given object, its TagName = V1101 and its HierarchicalName = Line1.Tank1.InletValve.

Template
An object containing configuration information and software templates used to create new Derived Templates and/or Instances.

Template Toolbox
The part of the IDE Main Window that hosts template toolsets, which contain object templates. The Template Toolbox contains a tree view of template categories in the Galaxy.

Toolset
A named collection of Templates displayed together in the IDE Template ToolBox.

User Defined Attributes (UDA)
The purpose of a User Defined Attribute is to allow users to add new functionality to an object. An attribute which is added to an object at configuration time

UserDefined object
An AutomationObject created from the $UserDefined template. This template does not have any application-specific attributes or logic. Therefore, the user must define these attributes and associated logic.

WinPlatform object
An object that represents a single computer in a Galaxy, consisting of a systemwide message exchange component, a set of basic services, the operating system, and the physical hardware. This object hosts all AppEngines.