Glossary

Prefix	Meanings	Value
m-	milli-	10^{-3}
k-	kilo-	10^{3}
M-	mega-	10^{6}

A

absolute date
absolute time
Numeric system Lookout*Direct* uses for keeping track of dates and times, in which midnight (0 hours), January 1, 1900 is represented by 1, midnight of January 2, 1900 is represented by 2, and so on. The absolute date/time number 36234.47222250 represents 11:20 A.M., March 15, 1999.

The numeric value for 1 second in Lookout*Direct* is .000011574, the numeric value for 1 minute is .000694444, and the numeric value for 1 hour is .041666667.

ACK
Acknowledge (an alarm or event).

active notification
A feature of event-driven software systems in which the application is alerted of value changes when they occur instead of through continuous, loop-driven queries.

address space
An OPC term for the area you browse to find what items are available on an OPC server. Part of the standard OPC interface, this space may arrange items hierarchically.

alarm
Software notification of a condition in a process. This alarm may call attention to a value that has exceeded or fallen below certain levels, set in the object database or in an Alarm object.

alias
Name given to a data member using the **Edit Database** dialog box. This name can be descriptive or mnemonic, and can be associated with other data member configurations such as scaling, logging, and alarming. A data member can have more than one alias, each with different associated configurations.

B

baud rate	Measurement of data transmission speed, formally defined as the number of electronic state changes per second. Because most modems transmit four bits of data per change of state, is sometimes misused or misunderstood—a 300 baud modem is moving 1200 bits per second. *See* bps.
.bmp files	Graphic files in bitmap format. If you are using a `.BMP` file in Lookout*Direct*, you cannot resize it on screen. *See* Windows metafile.
bps	Bits per second—measure of the rate of transfer of data.

C

CBL compiler	Lookout*Direct* uses the CBL (Control Block Language) compiler to compile a Lookout*Direct* source file (`.lks`) into a binary file (`.l4p`).
.cbx file	A Lookout*Direct* file containing a Lookout*Direct* object class. A `.CBX` (Control Block Extension) file can have one or more object classes in it.
checksum	A method of verifying that the number of bits received is the same as the number of bits transmitted. Used by TCP/IP and serial protocols.
Citadel	The Lookout*Direct* historical database that stores your data for access later.
classes	*See object classes.*
client	A Lookout*Direct* process that monitors a Lookout*Direct* server process. Lookout*Direct* clients should be computer independent so that they can be run from any computer on your network. Lookout*Direct* server processes run on computers actually connected to your control hardware.
comm port	Term sometimes used for a serial port.
connection	Input to a Lookout*Direct* object's writable data members. For more information, refer to Chapter 4, *Using LookoutDirect*, in your *Getting Started with LookoutDirect* manual.
control objects	Lookout*Direct* objects you use to control a process, change a data value, adjust a register, and so on.

controllable objects	Lookout*Direct* objects you can control with a Lookout*Direct* control object.
.csv files	Comma Separated Value file, a format widely accepted by spreadsheet and other data handling programs.
CTS	Clear to Send. Part of a handshaking protocol for certain devices that connect the serial port of a computer. See the *RTS/CTS Handshaking Settings* section of Chapter 3, *Serial Port Communication Service*, for detailed information.
cursor (data table)	The Lookout*Direct* data table can activate one row of data at a time using the data table cursor. See the Data Table reference in the online help or the Lookout*Direct Object Reference Manual*.

D

DAQ	Short for Data AcQuisition.
data member	Data source or sink associated with a Lookout*Direct* object. A readable data member, or source, can be used in expressions or as inputs to other objects. A writable data member, or sink, can have at most one connection into it, created using the **Object»Edit Connections** dialog box. A data member can be both readable and writable.
	See also native data member and *alias*.
data type	Kind of value (numeric, logical, or text) that a parameter or data member can hold.
database	Collection of data stored for later retrieval, display, or analysis.
datagram	Message sent between objects in Lookout*Direct*. A datagram contains a route and a value.
DCOM/COM	Distributed Component Object Model, a Microsoft standard in which client program objects request services from server program objects.
	The Component Object Model (COM) is a set of interfaces, clients, and servers used to communicate within the same computer (running Windows 98/95 or Windows NT).

DDE	Dynamic Data Exchange, currently used in Lookout*Direct* to exchange data with other programs (such as Microsoft Excel) running on your network.
deadband	A value that must be exceeded for an alarm to sound or a change in state to be recorded. For instance, if you have a low-level alarm set at 5 with a deadband of 2, the alarm will not trigger until the value being monitored drops to 5. The alarm will then stay active until the value being monitored moves above 7. A deadband keeps small oscillations of value from triggering an alarm and then canceling it too rapidly.
deviation	Set a deviation to filter out small changes in value when logging data. Before being logged to a database, a value must change by at least the deviation amount of the last logged value.
dialing prefix	Part of the Hayes AT command set for use with modems. See the *Dial-Up Modem Settings* section of Chapter 3, *Serial Port Communication Service*, for detailed information.
displayable objects	A Lookout*Direct* object class that has a displayable component, such as a Pot, a Switch, or a Pushbutton.
DLL	Dynamic Link Library, which is a collection of small, special-purpose programs which can be called by a larger program running on the computer. Sometimes called Dynamically Linked Library.
driver objects	Lookou*Direct* objects used to communicate with PLCs, RTUs, and other I/O devices.

E

edit mode	Lookout*Direct* mode in which you can alter and create objects within a process. Switch in and out of edit mode by pressing <Ctrl-space> or by selecting **Edit»Edit Mode**.
engineering unit	In Lookout*Direct*, used to refer to scaled or converted data. Thermocouple data, for instance, arrives in volts as the raw unit, and must be converted to degrees, an engineering unit.
environment services	Tasks Lookout*Direct* performs as a part of making your SCADA/HMI work easier. Lookout*Direct* environment services include serial communications, database and logging, security, networking, alarming, and so on.

Ethernet	A widely used, standardized local area networking technology, specified in the IEEE 802.3 standard.
event	Anything that happens can be an event. In Lookout*Direct*, events include such things as adjusting a control value, entering or exiting edit mode, opening or closing a control panel, and logging in or logging out of the system.
expression functions	Mathematical, logical, and other functions used by Lookout*Direct* expressions.
expressions	Lookout*Direct* expressions are often paths to a data member. They can also function like variables that, using a spreadsheet cell-type formula, become capable of performing flexible, real-time math operations, condition testing, and other complex operations functions. See Chapter 1, *Expressions*, for more information on expressions.

F

failover	A failover is the takeover of a process by a standby computer when the primary computer fails for any reason.
FieldBus	An all-digital communication network used to connect process instrumentation and control systems.
FieldPoint	A National Instruments hardware product line for industrial automation, control, monitoring, and reporting.
frame	Sequence of bytes sent from a computer to a device or vice versa. The syntax of the frame depends on the protocol being used. A read frame contains enough information to specify a set of variables whose values the device should return. A write frame specifies a variable in the device and a new value to write into that variable. Some protocols support the writing of multiple variables in a single frame. A response frame is returned from the device to the computer, indicating whether the frame just sent to it was received successfully. If the frame just received was a read frame, the response frame contains a set of requested values.
functionality	The way an object works, operates, or performs a task. Functionality is a general concept that applies in the same way to all objects in a given object class. Parameters define the specific functionality of an individual object.

functions | *See* expression functions.

G

gray proximity | A term used in Lookout*Direct* color animation. This sets what percentage of gray will be replaced by a given color as conditions change in a monitored value or set of values.

H

Hi and HiHi | Alarm settings. Both warn that a value has gone above some setpoint. Generally a Hi alarm is used to alert an operator of a need for intervention. A HiHi alarm is usually used to alert an operator that the value has been exceeded by an even greater margin than a Hi alarm indicates, and is usually used to indicate an urgent need for action.

historical logging | The process of storing data in a database for use at another time, or from another location.

HOA | Hand-Off-Auto control, used to set whether a value must be changed manually, is completely turned off, or functions automatically. You can use a Pot object and a complex expression to create this sort of control in LookoutDirect, or you can use a RadioButton object, depending on the particular requirements of the task you need to accomplish.

I

I/O point | Every read-only, write-only, or read-write connection Lookout*Direct* makes to external hardware is counted as an I/O point. Lookout*Direct* is licensed for use with a set number of I/O points. If you exceed the number you are licensed to use with your copy of Lookout*Direct*, a warning message appears on your computer screen warning you to shut down one of your processes within a specified time before Lookout*Direct* cuts back on I/O usage.

(implicit) data member | A Lookout*Direct* data member containing the fundamental data for certain object classes. When you make a connection to an (implicit) data member, you only use the name of the object, not the name of the object followed by the data member name.

L

.l4p files

File extension for Lookout*Direct* process files. These are the compiled files LookoutDirect runs when it runs a process.

.l4t files

File extension for a Lookout*Direct* state file, which stores the values for Lookout*Direct* controls and other objects with state information.

.lka files

File extension for Lookout*Direct* security files.

.lkp files

File extension for Lookout*Direct* process files in versions of Lookout*Direct* earlier than Lookout*Direct* 4.

.lks files

File extension for a Lookout*Direct* source file, which Lookout*Direct* compiles to make a Lookout*Direct* process file that Lookout*Direct* can run. This is the file you should make sure you keep backed up in case you need to recreate a corrupted process file, or in case some future version of Lookout*Direct* cannot run a process file compiled in an earlier version of Lookout*Direct*.

logging

The process of storing data in a computer database file. See Chapter 7, *Logging Data and Events*, for more information on logging data in Lookout*Direct*.

logical data member

A Lookout*Direct* data member of the logical data type.

.lst files

Extension for the Lookout*Direct* state file in versions of Lookout*Direct* earlier than Lookout*Direct* 4.

M

multiplex

A method of working with more than one data stream using only one communications channel. There are a number of different methods of multiplexing, depending on the hardware and software being used. A number of Lookout*Direct* driver objects support multiplexing hardware.

N

native data member	Data members built into a Lookout*Direct* object class, as opposed to data members you create by using aliases.
NetDDE	A way of networking using DDE (dynamic data exchange), retained in Lookout*Direct* 4 for compatibility with earlier versions of Lookout*Direct*.
numeric data member	A Lookout*Direct* data member of the numeric data type.

O

object	A specific instance created from an object class.
object classes	Software modules you use to create individual objects to perform tasks in Lookout*Direct*.
object connections	Software links between objects used to transmit data and commands from one object to another.
ODBC	Open DataBase Connectivity, a standard application programming interface (API) for accessing a database. You can use ODBC statements to access files in a number of different databases, including Access, dBase, DB2, and Excel.

ODBC is compatible with the Structured Query Language (SQL) Call-Level Interface. ODBC handles SQL requests by converting them into requests an ODBC database can use. |
| OPC | OLE for Process Control, an industry standard interface providing interoperability between disparate field devices, automation/control systems, and business systems. Based on ActiveX, OLE, Component Object Model (COM), and Distributed COM (DCOM) technologies. |

P

parameter	Input to an object, similar to a writable data member, whose value is specified in the object parameter list in a Lookout*Direct* source (`.LKS`) file. Typically, parameter values are set in the object **Object»Create** or **Object»Modify** dialog box.

ping	A small utility program in Windows and DOS that checks to see if a computer can be reached across a network. Also used to indicate the running of that program.
pixel	Picture Element, the smallest bit of a picture. Has one color or shade of grey. The number of pixels per inch determine the resolution of an image.
PLC	Programmable Logic Controller.
poll	A software event in which a computer checks some value in a device or register. In Lookout*Direct*, a logical command that forces a device poll to check data member values.
poll rate	How often a device is polled.
pop-up panel	One variety of Lookout*Direct* control panel that can only be displayed at the size set by the process developer, and which cannot be maximized. When open, a popup panel remains on top of other panels until minimized.
process	In Lookout*Direct*, process refers to a Lookout*Direct* "program", used for industrial automation, control, monitoring, or reporting.
process file	The Lookout*Direct* binary file Lookout*Direct* executes when running a process. Carries the `.l4p` extension.

R

raw unit	Data as it arrives in your process, such as voltage or amperage. Thermocouple data, for instance, arrives in volts as the raw unit, and must be converted to degrees, an engineering unit.
receive gap	A serial communications setting that determines the number of empty bytes (or amount of time) a driver receives before recognizing the end of a message frame and requesting another message. See the *Setting Receive Gap* section of Chapter 3, *Serial Port Communication Service*, for more information about the receive gap.
redundancy	A system for making sure that a computer can come online and run a Lookout*Direct* process if the computer currently running that process fails for some reason.

remote	In the context of Lookout*Direct*, remote is a position source location for a control. See the *Remote Position Source* section of Chapter 4, *Using LookoutDirect*, in the *Getting Started with LookoutDirect* manual for detailed information on the Lookout*Direct* remote position source.
resolution	The smallest signal increment that can be detected by a measurement system. Also, the number of pixels per inch on a computer monitor screen or dots per inch in printer output.
RTS	Request to Send, part of a handshaking protocol for certain devices that connect the serial port of a computer. See the *RTS/CTS Handshaking Settings* section of Chapter 3, *Serial Port Communication Service*, for detailed information.
RTU	Remote Terminal Unit, a device similar to a PLC for use at a remote location, communicating with a host system through radio or telephonic connections.
run mode	Lookout*Direct* mode in which processes run but no editing changes can be made. Switch in and out of run mode by pressing <Ctrl-space> or selecting **Edit»Edit Mode**.

S

SCXI	Signal Conditioning eXtensions for Instrumentation, a National Instruments product line for conditioning low-level signals.
security accounts	Also called user and group accounts, Lookout*Direct* uses security accounts to define what users or group of users have different operation privileges in Lookout*Direct*. See Chapter 6, *Security*, for detailed information on Lookout*Direct* security.
server	A process that provides data (services) to client processes. In Lookout*Direct*, server processes are intended to be run on one computer only, with direct connections to field hardware. Client processes interact with field hardware through server processes.
source file	Lookou*Direct*t file that can be compiled to produce a binary Lookout*Direct* process file that runs a process. Uses a `.lks` file extension.
SQL	Structured Query Language, used to get information from and update information in a database.

standby	A computer standing by to take over running a process if the primary computer fails or falls offline.
startup file	A Lookout*Direct* process file (`.l4p`) you designate in the **System Options** dialog box that Lookout*Direct* will open and run any time Lookout*Direct* is opened.
state file	The Lookout*Direct* file that stores the value of all Lookout*Direct* control parameters and object data members in use in a process. Uses the file extension `.l4t`.
system objects	Lookout*Direct* objects used to control other objects or process and analyze data.

T

TCP TCP/IP	Transmission Control Protocol, a method (protocol) for sending data between computers. Used with IP, the Internet Protocol. TCP/IP sends data as packets, with IP handling the delivery of data and TCP keeping track of the individual packets.
text data member	Lookout*Direct* data member used for text data.
trace	A term for data from a single source over some period of time, stored in an ODBC-compliant database.
traces table	ODBC databases present data in the form of traces tables. A traces table contains a field or column of data for each data member being logged, along with a field you can use to query the database.
trend	Historical data showing the change in a value over time. Often used in connection with graphing the data for display.

W

.wav files   File extension given to sound files. You can play a `.wav` file in Lookout*Direct* to add sounds or speech to alarms or events.

Windows metafile   A standard graphics file type for use in the Microsoft Windows operating environment. If you use a metafile graphic in Lookout*Direct*, you can enlarge or reduce it on the screen, use them as masks without specifying transparent pixels, and use the Lookout*Direct* Animator to animate the colors of the graphic.

.wmf files   File extension given to Windows Metafile graphic files.

X

.xls files   File extension given to Microsoft Excel files.