

Get Smart About SmartCart® AGCs



The SmartCart AGC product line was designed with two primary goals in mind:

- Easy to install and modify
- Open controls architecture

The reason for these goals is to establish a product that integrators and customers can maintain with little or no outside assistance. With basic skills and help from documentation and training, the SmartCart Product can be easily managed and modified.

The following classes are offered to enhance your knowledge of the features and controls systems for the SmartCart product line. After completing these classes, technicians; maintenance people; and engineers will be able to take care of a SmartCart system.



Daifuku Site Class	Length	Price [‡]	Class Size	Additional Information
• CartTools Programming	2 days	\$2000	6	By special request
• CartTools Programming & SAM Operators Training	3 days	\$3000	6	Scheduled class
• SAM Certification for Transport Control	3 days	\$3500	6	VARs only, by special request
• SAM – Assembly Manager Training	2 days	\$2500	6	VARs only, by special request
Customer Site Class	Length	Price [†]	Class Size	Additional Costs
• Basic Maintenance and Troubleshooting	2 days	\$8000	8	Fixed-price travel and living expense is \$1,900 for base 2 day trip.
• SmartCart Awareness Training	1 day	\$5400	12	Fixed-price travel and living expense is \$1,600 for base 1 day trip and \$300.00 for each additional day.
• For additional days*	1 day	\$1800	12	

Fixed price travel available for most US locations, please consult our training coordinator for verification.

* Additional days for customer site classes can only be added when a base class is ordered. Additional days must immediately follow the base day(s) with no gaps.

Here's What Customers & Industry Experts are Saying about SmartCart AGCs & Smart Handling University

“With little previous experience with the AGC system, I was very pleased with the information covered in this course. The 3 days I've spent here has saved me months of stumbling around trying to learn the system on my own and still would not have all the knowledge obtained. I feel better going back to my plant with being able to watch our system and mentally understand what is going on with the software in the background.



It is also very helpful to learn the terminology to be able to discuss the system intelligently with Tech Support if problems would arise. *Just an excellent, must-have first class.*”

Carl G. Blaylock | Project Engineer | Southeastern Container



“The advantage of being able to just pick up the magnetic tape and change the layout in a matter of minutes allows us to change an entire line over a weekend. When you look at the bang for the buck, you can't beat these SmartCarts.”

Dave Werkheiser | Manufacturing Engineer | John Deere

“The SmartCarts are safe, simple and easy to set up. They have a lot of potential for almost every industry, and they're relatively inexpensive.”

Nidamaluri Nagesh | Advanced Manufacturing Engineer | General Motors*

“With the carts, all we have to do is prep the floor and put down some magnetic tape to reconfigure the path. We can do that over a weekend or a holiday shut down.”

Larry MacAdam | Materials Industrial Engineer | CAMI

* "Automatic Cart Makes it Easier to Handle Parts" *The Detroit News*, January 11, 2005

CartTools Programming



Overview

This course provides the knowledge base for utilizing CartTools to program simple or complex reliable systems, providing an in depth discussion of CartTools commands and programming best practices.

Programming Functions

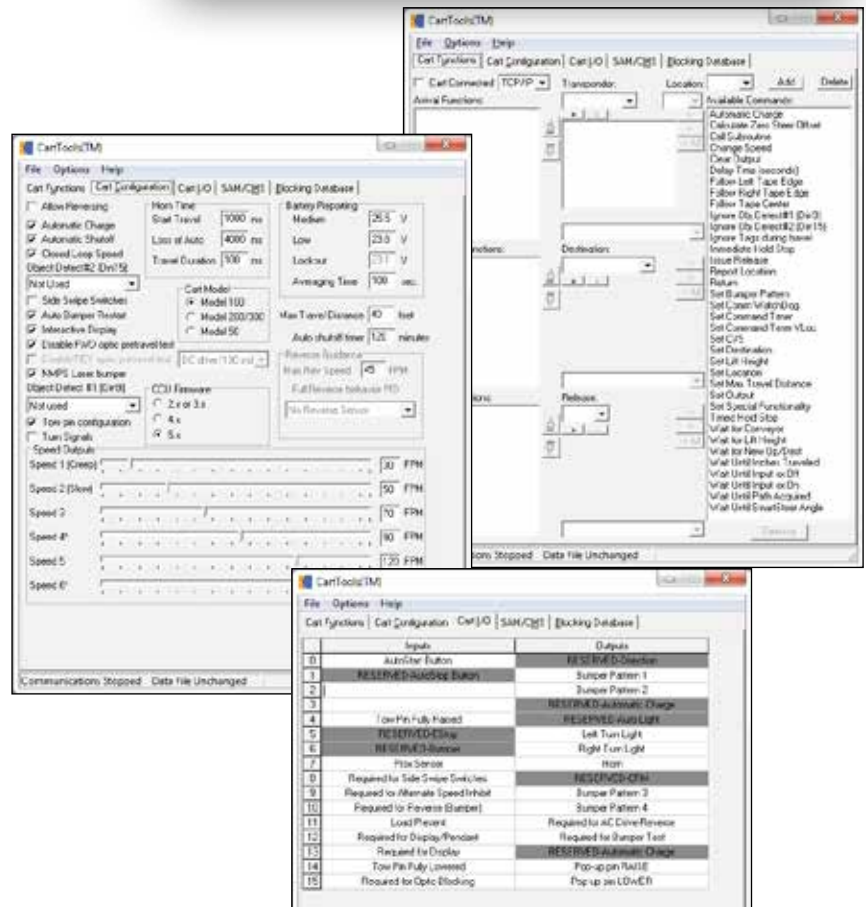
- Review functionality and best practices of each command.
- Incorporate exercises and actual programming of SmartCarts on site
- Review files generated by CartTools



Blocking Database

- Normal release
- PLC destination
- PLC release
- Alternate routing
- Negative claimed/required blocks.

Students completing this course will leave with full working knowledge on how to efficiently and effectively program any type of SmartCart product and system and will be able to make changes at any time by themselves.



CartTools Programming and System Automation Manager (SAM) Operators Training



Overview

This course combines CartTools Programming with System Automation Manager (SAM) Operators training. CartTools programming provides the knowledge base to program simple or complex systems, providing an in depth discussion of CartTools commands and programming best practices. SAM is a robust control system of Automatic Guided Vehicles (AGVs) and SmartCart Automatic Guided Carts (AGCs).

Included in this class are hands-on programming exercises of SmartCart AGCs along with an explanation of how traffic management is achieved through both programs. Operators learn how to monitor and interact with a system's vehicle fleet through SAM's SmartView Interface and how to make modifications to a system through both CartTools and SAM programs.

All CartTools Programming Material Covered (see previous page)

SAM Topics Covered Include

- System Architecture
- Startup/Shutdown
- SMARTVIEW™ Operator Screens

- Hot Backup
- Centralized Vehicle Management
 - Traffic management
 - Dynamic routing
 - Continuous communication
 - Alarming
 - Vehicle management

Introduction to SAM System Applications

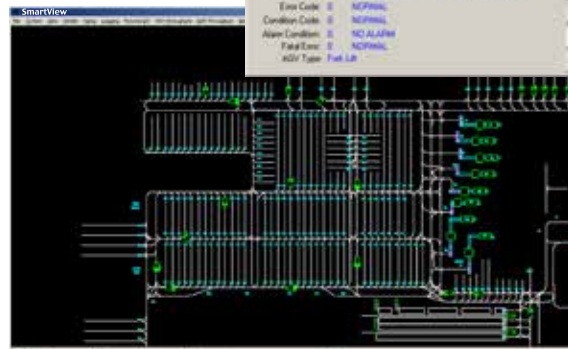
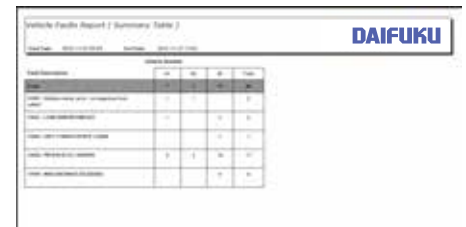
- Transport management
- Assembly management
- Remote dispatching management

Graphical User Interface

- Monitoring system & vehicle status
- Operator interaction with vehicle fleet

Comprehensive Reports

- How to generate and read
- Setting reporting parameters



Basic Maintenance and Troubleshooting - On site



Overview

This on-site course promotes preventative maintenance procedures to increase the performance and longevity of Automatic Guided Carts (AGCs). Basic mechanical/ electrical functions will be reviewed with recommended guidepath installation and proper care. Class exercises and reference materials will be covered to assist users with troubleshooting techniques.

Electrical Functions and Maintenance Topics Include

- Vehicle power controls and safety relay
- CCU Board
- Radios
- Drive motor controller
- Ethernet communications with vehicle and SAM.
- Sensors
- Battery charging
- Steering components
- Speed Control components

Recommended Preventative Maintenance Schedules

- Weekly, monthly, and annual procedures

Guide Path Installation and Maintenance Topics Include

- Recommended installation and maintenance of magnetic paths, transponder reader antennas, transponders, and mag sensor calibration.
- (weekly, monthly, and annual).

Basic Troubleshooting Techniques Include

- Input/Output Sensors and switches
- Communication issues
 - o Guidance problems with tag reader antenna, steering, speed control, and brake operation
- Error recovery procedures



SmartCart Awareness Training



Overview

This class is useful for both operators and managers. It includes an introduction to AGCs and system overview. Safe operating principles are covered in detail with basic operator appropriate troubleshooting procedures.

Introduction to AGC Technology

- General Overview of all safety components
- Safe Operating Practices
- Manual and Automatic Operation
- Operator Controls
- Human Machine Interface (HMI)

SAM Overview and Basic Troubleshooting

- Introduction to SmartView Interface
- Proper Way to Remove and Insert Cart into the system
- Review Common Conditions and Faults
- SAM Reports



Type	Bus Route	Vehicle	Current Status	Current Stop	Next Stop	Stop #	Repeat	Route ID
0	Route 1	1	TRAVELING TO 85-02	85-02	85-02	1	1	1
0	Route 1	3	TRAVELING TO 85-06	85-02	85-06	2	1	1
0	Route 2	4	TRAVELING TO 85-01	85-02	85-01	1	X	2

Event Date/Time	Event	Job ID	Stock ID	Vehicle ID	PLC	Draw	Job Information
05/05/10 16:58:53	Job-Added	57	1236	1801-2	18022		
05/05/10 16:58:46	Job-Added	58	1236	1801-1	18024		
05/05/10 16:58:55	Job-Added	59	5237	1801-2	18014		
05/05/10 16:59:53	Job-Cancelled	58	1234	1801-1	18023		
05/05/10 16:59:16	Job-Assigned	57	1236	AGC-03	18012	18022	
05/05/10 16:59:46	Job-Complete	57	1236	AGC-03	18012	18022	
05/05/10 17:00:52	Job-Assigned	58	1236	AGC-04	18011	18024	
05/05/10 17:00:34	Job-Complete	59	1236	AGC-04	18011	18024	
05/05/10 17:00:52	Job-Assigned	58	1237	AGC-02	18013	18014	
05/05/10 17:01:25	Job-Complete	59	5237	AGC-02	18013	18014	
05/05/10 17:02:58	Job-Added	5			18006		
05/05/10 17:04:35	Job-Cancelled	52	Route 1	AGC-02	18001	18001	
05/05/10 17:05:25	Job-Added	5			18006		
05/05/10 17:05:44	Job-Added	5			18006		

SAM Certification for Transport Control



Overview

This class teaches the configuration of the following SAM options available for sale by Webb and VARs:

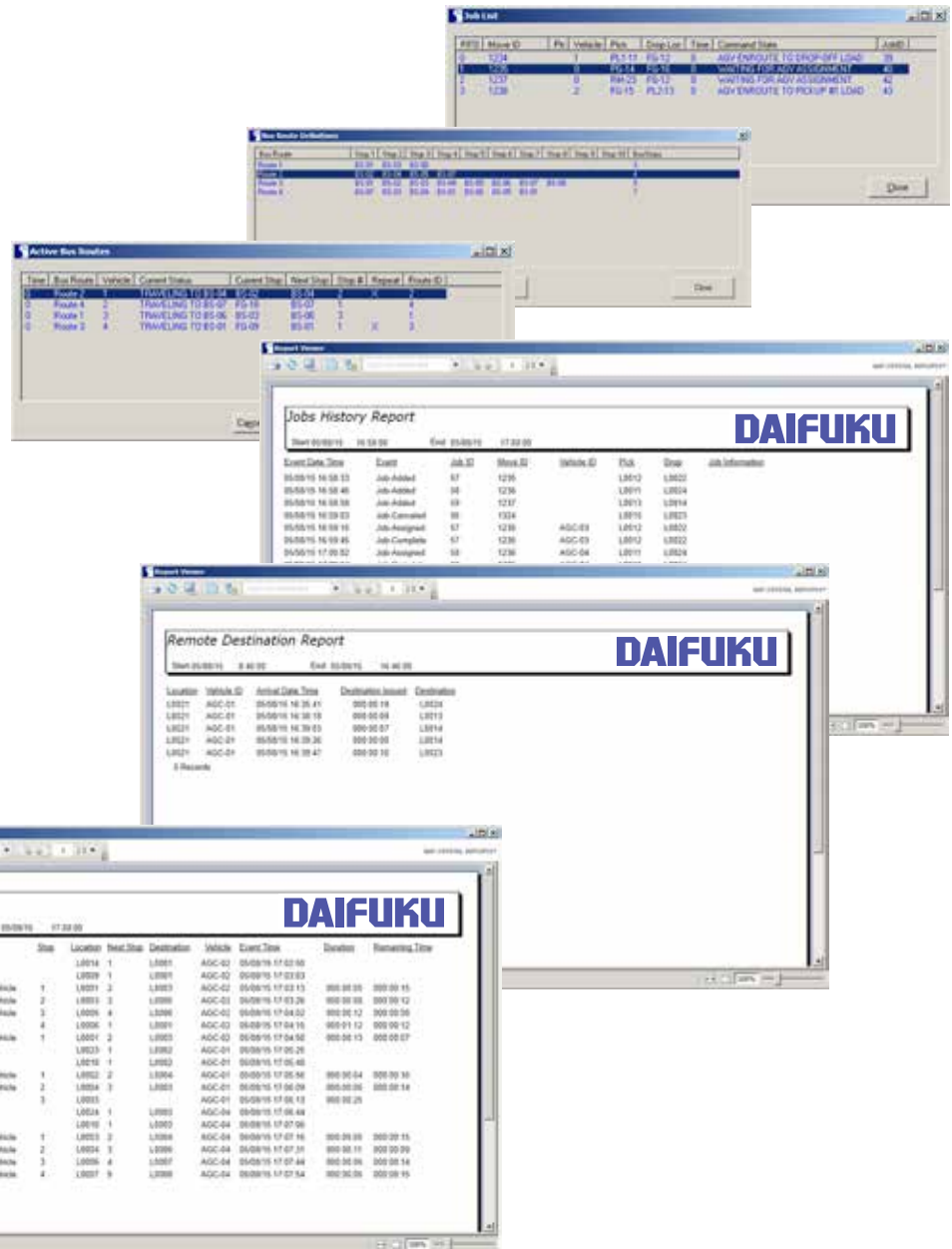
- Remote Dispatching
- Transport Management
 - Bus Routes
- Transport Management
 - Auto Transports

Certification in this class is required to:

- Sell SAM Transport Functionality
- Configure, Install, and Modify a SAM Transport Management System
- Request Technical Support for SAM Transport Manager from JBW Engineer Groups.

Prerequisites

- CartTools Programming
- SAM Operators Training



SAM Assembly Manager Training



Overview

This class teaches the configuration for assembly line applications for sale by Webb and VARs

Assembly Line Concepts

- Workcells
- Stations
- Queue Counts
- Lift Heights

Sleep Mode and Assembly Systems

Assembly Systems Subsystems

- SAM
- SmartView
- PLC
- SmartCarts

SmartView for Assembly Systems

Assembly PLC Interface

SAM Configuration

- PNDDEF.dat (Defining Workcells and Stations)
- OPCMgr.xml (Defining OPC tags)
- AssemblyMgr.ini (Configuring the Assembly Line)

CartTools for Assembly Lines Review

- Workcell conventions

Test Track Layout and Testing

- Identify workcells
- Configure PNDDEF.dat
- Configure OPCMgr.xml
- Configure AssemblyMgr.ini

Making Changes and Troubleshooting Techniques

- Adding a workcell
- Adding a queue station

Prerequisites

- CartTools Programming
- SAM Operators Training

TO SCHEDULE CLASSES

Check online for class schedule. <http://daifukuna.com/About-Us/SHU>

Credit card payment or purchase order accepted.

Contact Customer Service for reservation requests.

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NOTICE: * Smart Handling University is the name of our SmartCart AGC training program. No course credits nor degree will be earned with the completion of these courses.
‡ Price per person
† Price per class