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# White Paper - Benefits of Using 3<sup>rd</sup> Party Controllers

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## **1 Introduction**

In convenience stores, there is a component that is often referred to as the forecourt. For the purposes of this paper, the forecourt is defined to include the following items:

- Fueling dispensers and in-dispenser payment terminals (DPTs)
- All devices contained within the fueling dispensers (displays, printers, cash acceptors, barcode readers, etc.)
- Island Payment Terminals (IPT)
- Change Back Machines (CBM)
- Leak detection systems
- Car wash controller systems
- Electronic price signs
- Debit processing systems for pay at the pump (PAP)
- Card processing networks (optional)

Within this environment, one of two paths is taken for support of the forecourt devices:

1. Utilize a 3<sup>rd</sup> party interface for support of the forecourt devices
2. Integrate support for the forecourt devices within the POS

This white paper illustrates the benefits of utilizing a 3<sup>rd</sup> party interface for controlling and interfacing with forecourt equipment. The Allied Electronics, Inc. line of forecourt controllers will be used as the basis for details. The benefits will be broken down into the following subject areas:

- Integration & Performance
- Software Maintenance & Support
- Service

## **2 Integration & Performance**

Why is forecourt control so burdensome?

- Dispensers, DPTs and Island Payment Terminals (IPTs) require constant polling. This utilizes a lot of CPU resources and causes constant processor interruption.
- Forecourt devices present proprietary software and electrical interfaces such as current loop. PC-based devices have to add hardware conversion boxes which often required their own power supplies. This adds additional points of failure, particularly as these devices are not designed for the unique demands of the forecourt.
- As the number of forecourt devices (e.g. dispensers & card readers) increases, the burden on the controlling device increases. Desktop-based controllers running Windows or similar operating systems often cannot keep up.

- The transaction flow of every device on the forecourt must be managed. For example, card readers are “dumb” devices. They don’t know what message to display, or how to process a card swipe. To properly control devices in the forecourt, the state of every other device must be understood.
- The ability to sell items at the DPT such as car washes also requires coordination between payment terminals and other devices (i.e. car wash controller), thus requiring additional system resources.

How does a forecourt controller help?

- Off-loading the control and monitoring of the forecourt to a 3<sup>rd</sup>-party controller simplifies, streamlines, and speeds POS development by reducing the number of functions integrated into the POS.
- The POS interfaces to a single device (the controller) instead of many devices. This removes many performance demands from the POS and reduces POS development time.
- Forecourt controllers such as the Allied NeXGen and Aegis utilize a RTOS (real-time operating system). Unlike desktop operating systems such as Windows, RTOSs are designed for fast, predictable performance, eliminating the sluggishness often experienced in desktop environments.
- Task priorities within an RTOS can be controlled and optimized, whereas the integrator doesn’t have the opportunity to do this with a Windows- based operating system.
- Forecourt controllers are designed to be scalable: increasing the number of fueling points or card reader devices does not slow down the system.

### **3 Software Maintenance & Support**

Use of a 3<sup>rd</sup> party interface also reduces the tasks associated with constant software maintenance and support. This allows a POS to focus on support and maintenance associated with typical POS and in-store functions. Forecourt maintenance and support are maintained by the controller.

To understand the maintenance requirements, it is important to review the requirements of an integrated solution.

- Support of multiple device manufacturers requires the application to support multiple protocols. Each manufacturer utilizes a proprietary protocol. This is true for dispenser manufacturers, but also is common with other devices such as leak detection systems, car wash controllers, IPTs, electronic price signs and card processing networks. Using a 3<sup>rd</sup> party interface provides a single, generic interface for the POS, regardless of the equipment utilized on the forecourt.

- Use of a 3<sup>rd</sup>-party controller insulates the POS from changes to any of the forecourt devices. For example, the Allied controllers support all variants of Gilbarco dispensers and in-dispenser payment terminals. The differences between legacy and new equipment are managed by the interface. These differences have no impact on the POS manufacturer.
- Because forecourt integration is off-loaded to the controller, new devices can be added and integrated with the overall solution (POS w/controller) more quickly. Therefore, speed to market can be greatly increased.

## **4 Service and Field Support**

Use of a 3<sup>rd</sup> party interface also simplifies the field support and service required. POS integrated systems often utilize different hardware and dispenser control units for each manufacturer. This requires field support personnel to maintain several flavors of hardware platforms, which increases the cost of what a servicer is required to maintain for support. It also requires field support to continually be trained on the different devices. Both items translate to additional costs.

The use of a 3<sup>rd</sup> party interface allows for service personnel to be trained on one hardware platform. Due to the nature and design of Allied controllers, servicers are able to reduce the amount of inventory required for service. The same controller is used, regardless of the equipment within the forecourt.

POS integrated systems also utilize additional hardware conversion products manufactured by 3<sup>rd</sup> party providers (e.g. RS232 to current loop converters). These devices require their own power source and introduce additional failure points within the overall system. Additional failure points translate to a less reliable solution.

Allied controllers integrate the physical interface requirements and do not require additional power sources. This translates to a much more reliable solution.

Allied controllers also integrate redundancy to reduce downtime for those inevitable failures. Examples are multiple points of connection for POS terminals and dispensers and/or card reader terminals. Redundancy is often not available in POS integrated solutions.

## **5 Conclusions**

Forecourt controllers, such as those provided by Allied, are utilized by many customers. In most cases, features and functionality required by POS users and integrators are already available.

This rich feature set, combined with the advantages in performance, integration, maintenance, support and service demonstrate that a dedicated forecourt controller provides a robust cost-effective solution, whose benefits and actual cost savings outweigh the perceived benefits of an integrated solution.