

## ACK Terminal Server

### Introduction

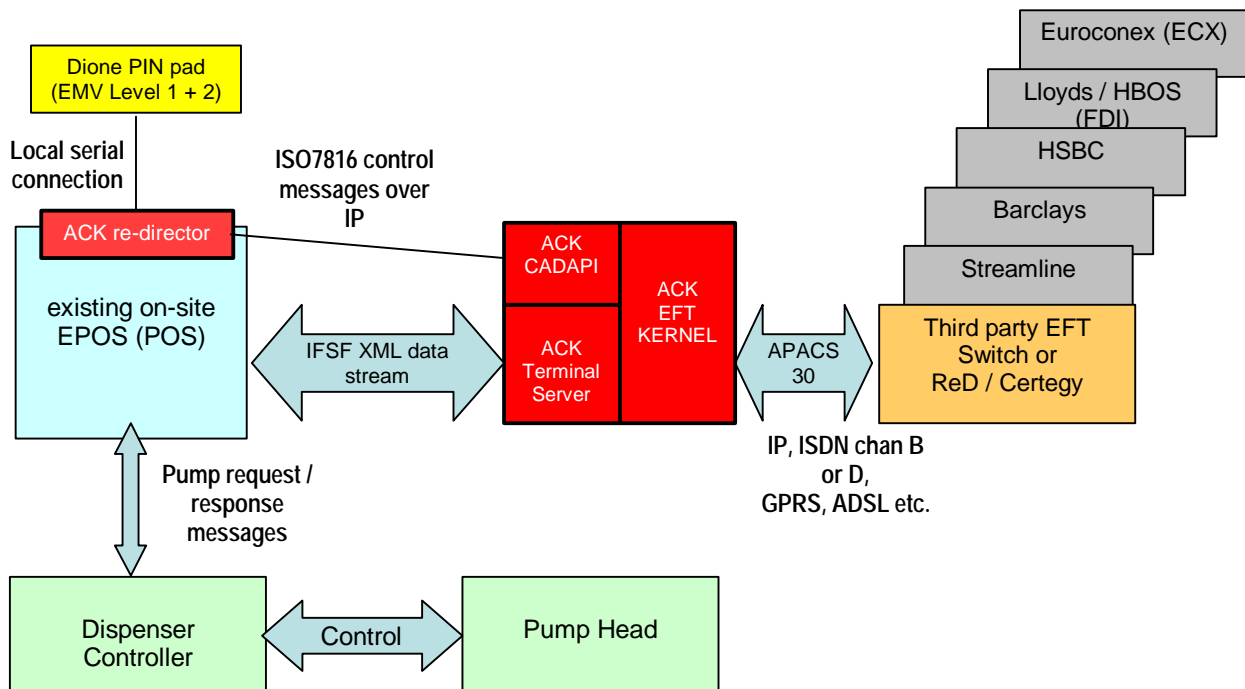
ACK offer a number of “tightly coupled” development kits for adding card payment services to POS systems. The down side of such a coupling is the POS system itself needs to go through end-to-end acquiring bank approval. Additionally, significant development effort is required by the POS developer to satisfy the various transaction scenarios and receipt formats.

To counter this problem, ACK developed ACKTerm – a standalone Win32 application that is “loosely coupled” to the POS system using .INI files. Using this utility, integrated EFT can be added to virtually any POS in a very short time frame without any need to undertake end-to-end acquiring bank approval – this is because the POS benefits from the generic approval of ACKTerm. However, there are some compromises: – ACKTerm is a separate application from the POS, has a different “look and feel” from the POS application, and uses file-interchange rather than a program-to-program interface. ACKTerm is also restricted to Win32 POS based system platforms.

A solution to the platform problem would be to make ACKTerm a client server solution – allowing inputs and outputs to be sent over an IP network. The “look and feel” problem could be solved by making all progress, decision-making and data-entry actions flow via the client application – albeit in a generic fashion to allow generic end-to-end acquiring bank approval.

Naturally, ACK could have created a proprietary protocol for this purpose, but, due to its strong presence in the petrol retail market, were aware that the fuel industry had already specified one - The International Forecourt Standards Forum (IFSF) “EPS-POS Interface”[1] – which satisfies ACK criteria. ACK Terminal Server (ATS) is the realisation of the ambition to make ACKTerm a client server application.

### Generic ACK Terminal Server schematic



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Confidential Information

**International Forecourt Standards Forum**

**IFSF / OPI XML message interface.**

The IFSF (International Forecourt Standard Forum ([www.ifsf.org](http://www.ifsf.org))) is a forum of the major international oil companies with the common objective of harmonisation of equipment interconnectivity and communication standards for use in the Petroleum Retail Business.

The IFSF has produced a set of international standards for forecourt automation including the standardisation of messages and protocols used in Electronic Funds Transfer (EFT).

The “EPS POS Interface”[1] describes the interface between the Point of Service Sell Application (POS) and the Electronic Payment Server Application (EPS). The target is de-coupling the POS application from the EPS application. EPS manages payment, POS manages selling, with no implication on each other.

ACK Terminal Server (ATS) provides the EPS functionality.

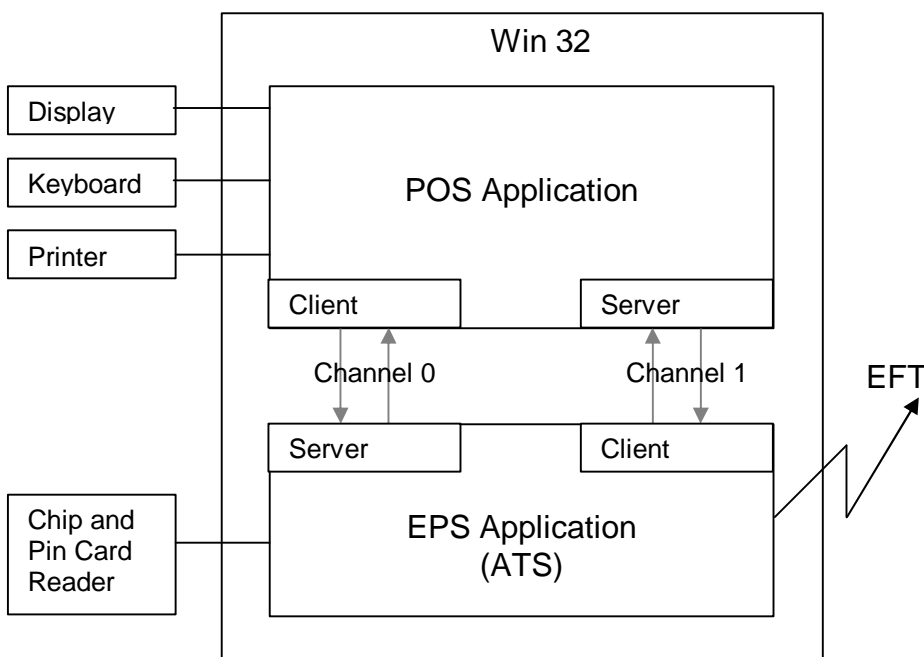
**Architecture**

Communication between the POS and EPS application is performed using XML frames over a pair of IP sockets:

- ? Channel 0 is used for exchanging Request/Responses instigated by the POS.
- ? Channel 1 for Request/Responses instigated by EPS.

**Standalone**

Fig 1

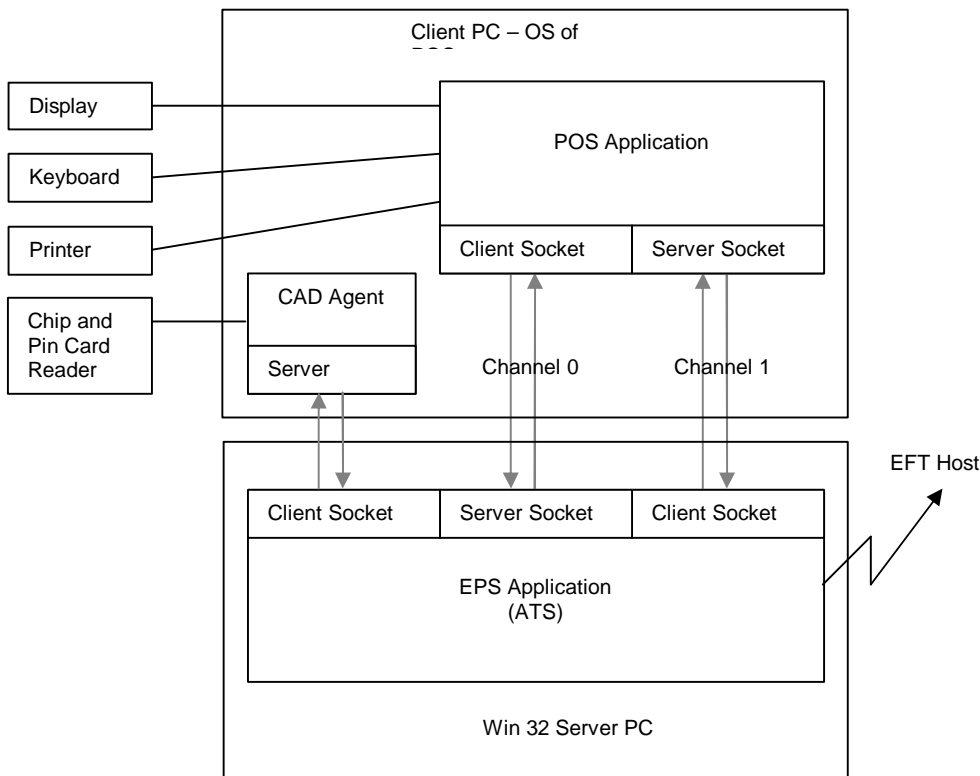


In a standalone solution, the POS and EPS applications run on the same machine, but sockets are still used for communication.

Note how the Display, Keyboard and Printer are all controlled by the POS, whereas the Chip and Pin Card Reader, and connection to EFT Host, are controlled by the EPS Application.

**Distributed**

Fig 2

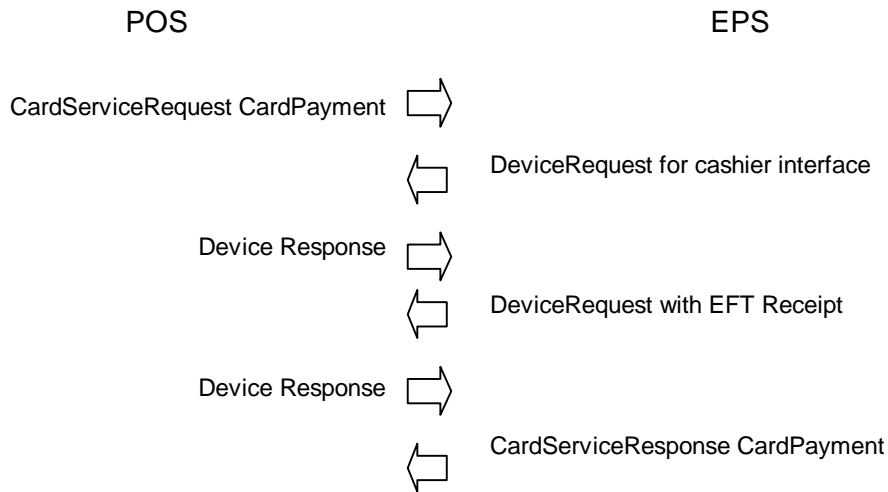


In a distributed environment, the POS application runs on a separate machine to EPS application. Each application retains control of their respective peripherals. The only exception is the physical connectivity between EPS and the chip and pin card reader. Fig2 illustrates the use of a CAD (card acceptance device) agent on the client machine, which allows the CAD to be connected to a serial port on the client, but is controlled from the server (NOTE: currently, the protocol used between ATS and the CAD agent is ACK specific and outside the IFSF specifications). Alternatively, Ethernet / wireless chip and pin card readers can be used.

The operating system of the client machine is dictated only by the POS application. Server machine still needs to be Win32.

### **Dialogue Sequence**

A sample dialogue sequence is illustrated below.



Note: Unsolicited DeviceRequests from EPS to POS outside an active (Card) ServiceRequest are not supported.

**Summary:**

The new interface is an extension of the established functions already present within the ACK software suite which are now exposed through a published, standard, interface.

All underlying functions of the ACK product are retained.

The message protocols may be readily adopted in other, non-fuel, POS environments, such as: mobile/portable payments, kiosk/vending, self-check out and for use with 'dumb' ECRs

**Supported Features:**

First release :

Credit/debit cards

Fuel cards (including product restriction codes, mileage and VRN)

Transactions generated from a counter-based EPOS system,

Standalone Windows EPOS systems

Networked Windows EPOS systems (client/server)

Dione, Trintech and Ingenico PIN pads

**Second release:**

Transactions generated from OPT/AFDs

Thin client EPOS systems (no client component required)

IP addressable PIN pads