



## Not a Business but a Mission

Innovative software for banking and financial institutions

# Synthesis™ for ISO-8583

Synthesis™ is Proteros Data System's advanced proprietary bridging software, which can be used for any ISO-8583-based transaction-processing system. Synthesis™ has been developed primarily to cater for Scheme migrations but also to give financial institutions an extended deployment window for the biannual mandatory Scheme changes.

The original ISO-8583 standard was devised many years ago with the technology that was available at the time. With many financial organisations now having legacy systems to support this core standard within their card-processing platforms, advances in software technology cannot be easily integrated nor taken advantage of. This means that a major part of any bank's IT infrastructure is supported by a legacy card-processing system that is costly to maintain and hungry for scarce specialist IT resources.

It is with this in mind that Proteros Data Systems decided to design and develop its Synthesis™ bridging software to help financial organisations take advantage of new technology, while at the same time lowering the cost and complexity of migrating from one ISO-8583 format to another.

### Product Overview

Synthesis™ has been designed to offer an ease-of-use and a flexibility that has been built around the latest Microsoft Windows® software development .NET technology.

The aim of the design has been to increase the quality and productivity of financial organisations' IT resources, while at the same

time driving down overall development costs.

This is achieved by providing integration software, such as Synthesis™, that facilitates legacy systems taking

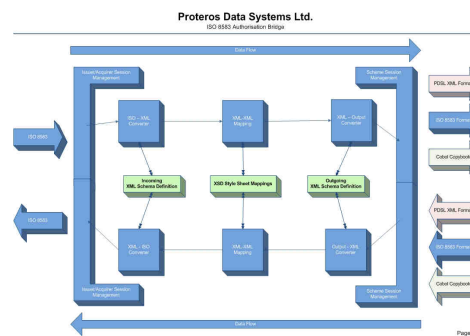
advantage of new technologies, while remaining virtually unchanged themselves.

One example of Synthesis's™ effectiveness is the ability to bridge the current global migration of MasterCard's European V5 format to MasterCard's International CIS format, by providing a means to convert incoming CIS-formatted messages to V5 ones and vice versa.



### Driving Down Costs

Synthesis™ simplifies the processing of any ISO-8583 message by taking away the complexities of that messaging system.



Furthermore, Synthesis's™ bridging capabilities provide a mechanism for the complexities of ISO-8583 to be eliminated altogether from the bank's host

system, by transforming any incoming ISO-8583 message into the universal XML format.

Using the integrated graphical user interface, existing or new ISO-8583 message structures can be created in minutes. It is possible to define any ISO-8583 message structure simply by using drag-and-drop techniques to configure Synthesis™ to process any variant that the host system is designed for, without the host system having to change.

This means that the legacy systems can be replaced with more up-to-date technology, which in turn widens the IT resource pool that can be utilised in this area.

# PROTEROS DATASYSTEMS

## **Visa & MasterCard ISO-8583 Comparison**

Although the ISO-8583 standard is the basis for all financial transaction messages, not all implementations of the standard are the same across different Schemes. There are differences between the various Schemes as to how the standard has been interpreted and implemented. Synthesis™ attempts to bridge the differences between Scheme implementations so as to smooth the transition from one version to another, or from one Scheme to another.

Although ISO-8583 is the standard used for all real-time authorisation messages, it should be noted that there are significant differences between the implementation of clearing records in Visa and MasterCard whereby MasterCard has chosen to continue the ISO-8583 standard through to its batch clearing messages, whereas Visa employs the use of fixed-length EBCDIC encoded message structures.

Synthesis™ is primarily aimed at bridging all aspects of the real-time authorisation messages, from the low-level TCP/IP communications protocol, through the network interface layer to the message layer itself, with development underway to find a suitable method to reduce the task of migrating from one clearing method to another.

Even though V.I.P. automatically converts the formats as required before messages are delivered to either BASE I or Single Message System (SMS) processing systems, the dynamic message definition employed by Synthesis™ in its bridge architecture provides a flexible and easily-maintainable alternative.

The main differences between the two major Schemes, Visa and MasterCard, are:

1. The existence of a header structure in VISA authorisation messages.
2. The possibility of a third bitmap within VISA authorisation messages.
3. Inconsistencies between both Schemes as to what are mandatory, optional and conditional data elements for any given message.
4. MasterCard clearing records are in ISO-8583 format whereas Visa' are not.
5. Visa treats ISO-8583 numeric fields as 4-bit Binary Coded Decimal (BCD) (unsigned packed) fields and alphanumeric fields as EBCDIC (character) fields, whereas MasterCard can have messages in either EBCDIC or ASCII representation.

Proteros Data Systems Ltd (Proteros) is a young and dynamic software development company seeking to establish itself as a leader in the delivery of innovative software solutions for banking and other financial institutions.

Incorporated in 2005, Proteros is comprised of an experienced team of practitioners with a composite skill set in IT and business disciplines, who have developed banking and card-management skills within world-class institutions. The vast experience that Proteros's founders bring with them has been distilled to produce a series of well-honed products to meet the financial industry's needs and satisfy their

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