WAY4 3-D Secure MPI

A software solution for acquirers and PSPs for secure mobile and e-commerce payments

Version 1.2

CONTENTS

BACKGROUND

Over the last decade, the world has experienced enormous growth in mobile and e-commerce payments. According to "The UPS Pulse of the Online Shopper" report, mobile e-commerce sales are projected to grow to $250 billion by 2020[1]. The projections for this continued growth challenge the payment industry, particularly around security, customer experience and buyers control over online and in-app purchases.

The number of disputed e-commerce transactions has also been growing rapidly, with Internet-related fraud cases constituting a significant percentage of all reported fraud cases. The majority of chargebacks for web transactions are fraud-related or originated by cardholders claiming non-participation. Frequent cardholder disputes undermine the confidence of merchants and acquirers and pose a threat to these payment channels.

At the same time merchants do not wish to sacrifice conversion for the increased security, because when it is too much effort to complete the payment, clients tend to abandon the cart.

To make online purchases more secure and reliable and enhance the customer experience, payment schemes developed the 3-D Secure standard around 20 years ago. This standard has been recently upgraded to the 2.X version, considering the specifics of the m-commerce purchase experience, namely:

- ✓ Support of more device types, such as smartphones, tablets and smart TV;
- ✓ More data for seamless security and new authentication methods support;
- ✓ Modern payment technologies and instruments support (e.g. tokenization, wallets, in-app payments);
- ✓ Frictionless flows where the cardholder's authentication is replaced with the risk-based assessment.

What is WAY4 3-D Secure MPI?

WAY4 3-D Secure MPI[2] is a software solution for acquirers and PSPs enabling a streamlined authentication of e-commerce payments through the 3-D Secure protocol. The WAY4 solution integrates with any 3rd party merchant management and e-commerce gateway system via APIs and provides frictionless transaction flows. It is fully PA-DSS compliant and meets all the security requirements of EMVCo.

[1] https://solutions.ups.com/rs/935-KKE-240/images/UPS-Pulse-of-the-Online-Shopper-2017-Volume-1.pdf

[2] In the new 3-D Secure protocol 2.x, the MPI module has been renamed to the 3DS Server. The MPI (Merchant Plug-In) naming goes back to the initial idea of the very first 3-D implementations, where the MPI was supposed to be situated on the merchant's side. OpenWay keeps this name for the new solution, as the WAY4 3-D Secure MPI remains capable of both protocols, and MPI is a widely used term in the market.

The WAY4 3-D Secure MPI solution can operate by itself as a complete stand-alone solution. It can be added on top of the existing acquiring infrastructure, as well as be part of the full WAY4 E-commerce Acquiring solution.

3-D Secure 1.x vs. 2.x

WAY4 3-D Secure MPI supports the existing 3-D Secure 1.x protocol and the brand-new 2.x protocol. During the checkout the solution automatically determines which protocol should be used to process the card. For acquirers and PSPs who already use the WAY4 solution for 3-D Secure 1.x, OpenWay offers a licensed upgrade to the 2.x version API suitable for versions co-existence time period.

Both 1.x and 2.x versions are to co-exist until the December 2020, and international payment schemes require financial institutions to strictly determine the version belonging to the card. The WAY4 3-D Secure MPI solution shares this information with the external 3-D Secure 1.x solutions, so financial institutions can route the card authentication accordingly.

BENEFITS

For acquirers and PSPs

Implementation of WAY4 3-D Secure MPI gives you the following advantages:

- ☑ **All-inclusive support**

  WAY4 3-D Secure MPI supports all existing 3-D Secure programs sponsored by payment schemes, including Verified By Visa, Mastercard Identity Check, AmEx SafeKey and JCB J/Secure. WAY4 also supports the internet payment service UnionPay Online Payment (UPOP), designed by UnionPay to offer a convenient and safe internet payment method for Chinese cardholders.

- ☑ **Increased revenue**

  WAY4 3-D Secure MPI increases cardholder confidence in the security of online purchases and improves customer experience. That makes merchants more willing to accept international transactions, increasing acquirer / PSP profits.

- ☑ **Reduced cost**

  WAY4 3-D Secure MPI protects the acquirer / PSP from fraud-related chargebacks, reducing chargeback handling costs.

- ☑ **Easy set-up of new merchants**

  Adding a new e-merchant is as easy as adding a typical POS merchant.

- ☑ **Simple integration with an existing e-commerce infrastructure**

  In order to enable the full range of 3-D Secure functionality, WAY4 3-D Secure MPI includes straightforward APIs, which can be integrated into the existing e-commerce infrastructure as a standalone solution.

- ☑ **Fault tolerance**

  WAY4 3-D Secure MPI allows several authentication servers to be used simultaneously. If one server is down, data will be re-routed through other servers.

- ☑ **PA-DSS compliance**

  WAY4 3-D Secure MPI is compliant with the PCI DSS standard, required by payment schemes.

- ☑ **Future growth**

  WAY4 3-D Secure MPI is one of the solutions for acquiring business that is supported on WAY4. Should you decide to upgrade your role within the acquiring value chain, you can add new functionality and run the full-fledged merchant acquiring and payment gateway on a single WAY4 platform.

For cardholders

The benefits for cardholders include:

- ☑ **Increase in confidence**

  Customers feel more confident when making purchases over the internet and other internet-enabled devices, e.g. smartphones, tablets

- ☑ **Easy to use**

  From the customer's perspective, 3-D Secure adds efficiency with minimal to no impact on the apps and payment flows that they are used to. No new skills are needed and thus the adoption is easy.

- ☑ **Frictionless flow**

  Risk-based authentication (RBA) on the issuer's side makes the authentication process easy and seamless for the buyers. They are not asked for any passwords and enjoy a smooth checkout flow without interruptions. WAY4 3-D Secure MPI provides the issuer's risk-based assessment module with all related information necessary for a frictionless authentication.

- ☑ **No special requirements**

  When using basic or OTP authentication methods, no special application software needs to be installed on the customer access device.

For merchants

Merchant benefits are:

- ☑ **Minimal impact on the merchant infrastructure**

  Host-based, WAY4 3-D Secure MPI does not require merchant plug-in deployment. So, the module can be easily integrated into existed e-shops without noticeable impact on the merchant infrastructure.

- ☑ **Increased conversion and sales**

  By enhancing customer confidence in online purchasing and making the checkout experience frictionless, WAY4 3-D Secure MPI helps to increase merchant sales.

- ☑ **Reduced risk and decreased dispute transactions**

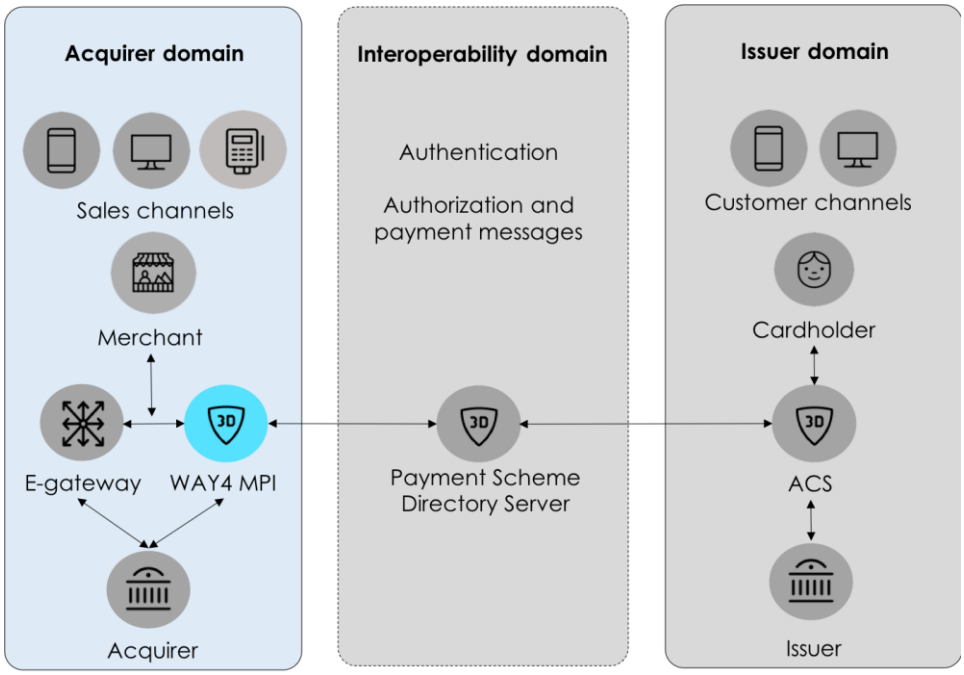
  Increased security through WAY4 3-D Secure MPI reduces the risk of fraudulent transactions and decreases the number of disputed transactions.

- ☑ **SDK for quick and easy integration with mobile apps**

  The solution is planned to support secure in-app purchases on top of browser-based e-commerce. Merchants will be able to easily implement this into the checkout flow within their applications using the WAY4 3-D Secure MPI SDK. This functionality will require a license extension.

WAY4 3-D SECURE MPI OVERVIEW

WAY4 3-D Secure MPI is a crucial part of a standardized three-domain e-commerce model as illustrated in the figure below. This scheme is applicable for both the stand-alone WAY4 3-D Secure MPI solution and the full WAY4 E-commerce Acquiring solution. The WAY4 3-D Secure MPI uses the same integration principles and APIs in both cases.



On the acquirer domain, the solution integrates with merchant management and e-commerce gateway systems via APIs. It provides authentication message exchange between the acquirer, payment gateway and international payment schemes.

If an acquirer uses WAY4 Acquiring and WAY4 E-Commerce Gateway as end-to-end merchant management and e-commerce gateway systems which share the same business core with WAY4 3-D Secure MPI, no special effort is required to implement an authorization process and clearing and settlement with e-merchants. WAY4 E-Commerce Gateway also supports alternative payment methods for e-merchants (e.g. Alipay, mVisa).

⇒ Read more on our website about WAY4 Acquiring and about WAY4 e-commerce gateway.

Besides, the acquirers that already run online acquiring on WAY4 can benefit from additional integration with the WAY4 core database that will help to reduce the number of data fields that should be sent to MPI.

To complete the suite, OpenWay provides a WAY4 3-D Secure ACS solution which handles the e-commerce transaction processing on the issuer's side.

⇒ For information on WAY4 3-D Secure ACS, please download the WAY4 3-D Secure ACS brochure from our website.

WAY4 3-D Secure MPI is implemented on the acquirer (or PSP) domain. This increases transaction security since sensitive information, such as card numbers, is not stored by the e-merchant. This reduces the possibility of fraud to a minimum, and also creates economies of scale when connecting new merchants.

The WAY4 3-D Secure MPI helps PSPs and acquirers perform the following functions:

- ☑ **Cardholder authentication**

  WAY4 enables merchants to integrate the authentication process seamlessly into their checkout experiences, for both mobile app and browser-based authentications.

  The solution organizes the message exchange with the issuer's ACS via the payment scheme directory server to validate the card's participation in the 3-D Secure program and, if successful, authenticates the cardholder.

- ☑ **Merchant authentication**

  The new procedures ensure that merchants participating in online transactions are operating under proper merchant agreements with the acquirer and payment gateway.

- ☑ **Transaction authorization**

  If the cardholder authentication response shows a successful authentication and the merchant is authorized, the payment gateway proceeds with transaction authorization.

- ☑ **Tokenization**

  Tokenization enhances the user purchase experience. It lets the acquirer or PSP to securely store the tokens for card details that a customer usually has to enter manually at every checkout. The 3-D Secure solution supports the initial step for tokenization enabling – the authentication.

3-D Secure programs

WAY4 3-D Secure MPI supports all 3-D Secure programs that exist in various payment schemes, including:

- ☑ **Verified by Visa**
- ☑ **Mastercard Identity Check**
- ☑ **JCB J/Secure**
- ☑ **AmEx SafeKey**
- ☑ **UPOP by UPI**

⇒ For information on WAY4 authorization and clearing interfaces to Visa, Mastercard, AmEx, JCB, and UnionPay, please download the respective brochures from our website.

Cardholder authentication

To support cardholder authentication on the acquirer side, WAY4 3-D Secure MPI provides the following functionality:

- ☑ **Requests to Directory Server (DS)**

  WAY4 3-D Secure MPI contacts the payment scheme's DS (to determine whether the cardholder is enrolled in 3-D Secure).

- ☑ **Authentication requests to ACS**

  If the cardholder is enrolled in 3-D Secure, WAY4 3-D Secure MPI sends an authentication request to the issuer's ACS via the cardholder's browser.

- ☑ **Issuer digital signature verification**

  After performing the cardholder authentication routine as defined by the issuer, the ACS formats and digitally signs the authentication response. Then the ACS returns the response to WAY4 3-D Secure MPI that verifies the issuer digital signature.

- ☑ **Non-payment user authentication**

  The latest edition of WAY4 3-D Secure MPI also allows acquirers to perform non-payment user authentication, which enables various online services outside payments that rely on trusted parties for user authentication. WAY4 3-D secure MPI collects and prepares all the data that is needed to proceed with identifying the customer as a trusted user and grant secure access to web-based services (for example, governmental portals, mobile wallet, online service subscriptions, etc.)

- ☑ **In-app authentication**

  OpenWay plans to provide a mobile SDK for merchant applications to perform an in-app authentication in the near future. The functionality will require a license extension.

Merchant authentication

When using WAY4 3-D Secure MPI, the acquirer is responsible for merchant authentication. This involves identifying a specific merchant and determining whether they are authorized to participate in 3-D Secure. To this end, WAY4 3-D Secure MPI provides:

- ☑ **Flexible merchant interface**

  WAY4 3-D Secure MPI provides a flexible interface to e-merchants for making online payments with 3-D Secure. The interface does not depend on the authentication method, and it is configurable for each merchant. Different cryptographic values can be used for various merchants.

☑ **Various merchant authentication methods**

Currently, WAY4 3-D Secure MPI supports two methods of merchant authentication:

- ✓ Message Authentication Code (MAC)
- ✓ Digital signature

Both MAC and digital signature are digital security codes created by a cryptographic algorithm. They are used to ensure data integrity and to verify the identity of the data sender.

☑ **Merchant authentication data management**

When using WAY4 3-D Secure MPI, the acquirer assigns and manages cryptographic values used for merchant authentication, such as encryption keys.

Transaction authorization preparation

If the cardholder and merchant authentication is successful, WAY4 3-D Secure MPI prepares all of the necessary data for the authorization request. Along with typical transaction information, WAY4 3-D Secure MPI provides the following values for the request message:

☑ **CAVV/AAV**

CAVV/AAV (Cardholder Authentication Verification Value/ Accountholder Authentication Value) is a cryptographic control value. It is generated by the issuer's ACS during cardholder authentication and transmitted to the MPI in the authentication response. When processing an authorization request from WAY4 3-D Secure MPI, the CAVV/AAV value is checked by the issuer to make sure that the cardholder has been authenticated.

☑ **ECI**

ECI (Electronic Commerce Indicator) shows the transaction's security level. It indicates whether the transaction is a 3-D Secure transaction, and if it is, whether the transaction is authenticated. The ECI value is generated by the issuer's ACS during cardholder authentication and copied by WAY4 3-D Secure MPI from the authentication response to the authorization request message.

Risk-based assessment

Risk-based assessment (RBA) allows an issuer to authorize or deny the purchase using risk analysis evaluation instead of asking the cardholder to enter one-time passwords or other verifications during the payment. WAY4 3-D Secure MPI collects and prepares an extended data set which is then transmitted through a dedicated message flow to the issuer for the risk analysis. This makes a payment frictionless and decreases the number of declines during authentication, thus driving conversion for merchants and improving the shopping experience for the cardholder.

⇒ The RBA functionality on the issuer side can also be supported in WAY4, and it is an essential part of the WAY4 3-D Secure ACS solution.

WANT TO KNOW MORE?

Thank you for your interest in our solutions. If you would like to know more about this solution or other WAY4 software solutions or contact an OpenWay office near you, please visit our website, http://www.openwaygroup.com, and other resources:

http://www.facebook.com/Openwaygroup

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