



Development, Enhancement and Infrastructure Testing of Chip and PIN Cards for Leading European Payments Network

Industry Landscape

Government regulatory requirements, increased cross-border mergers and acquisitions, the rapid adoption of new payment methods and the advancement of new technologies are transforming the IT landscape of most organizations around the world. While technologies shrink the world and help bridge gaps based on geographies, the way payments are handled around the world often varies country to country.

An example of this diversity is the way payment authentication and user verification is done for credit and debit cards. As of 2015, the identity of the cardholder using a credit or debit card with a chip in the United States, Mexico, the Philippines and some European countries (such as Germany and Austria) is verified using a signature. However, in most other European countries (e.g., the UK, Ireland, France, Finland and the Netherlands) as well as in Canada, Australia and New Zealand a PIN is used instead of a signature to confirm the identity of the debit or credit chip cardholder. The latter means of authentication and verification – called Chip and PIN – is considered by most as the most secure way to prevent card related fraud at the point of sale.

Business Objective

Differences of these kinds require payment organizations with a global reach to support multiple forms of authentication. This case study provides a description of how RS Software assisted one such organization promote the CHIP and PIN model to improve security and grow loyalty for its customers.

Solution Overview and Value Proposition

Core Payments Module Enhancement for Chip and PIN Authentication

The prime objective for the client was to strengthen the security offered to banks, cardholders and merchants by preventing fraud at the point of sale.

The client engaged RS Software to enhance its core payment processing modules to provide the following value:

- Enhance security, especially for card-not-present transactions, using chip cards.
- Standardize the authentication process to protect multiple payment products from fraud.
- Facilitate global interoperability by adoption of open source technologies.
- Allow opportunities for multiple applications such as loyalty, access control and micro payments.

To accomplish this, RS Software provided the following enhancements for transactions involving Chip and PIN cards:

- Modify existing code to facilitate mandated migration for members from Static Data Authentication to Dynamic Data Authentication on newly issued or renewed EMV cards.
- Implement the requirement that acquirers have the appropriate keys loaded in their offline capable chip devices to prevent offline data authentication or offline enciphered PIN failures within the strict timelines set by the network.

Incentive Management Program for Chip and PIN Cards

To achieve the client's targets for their loyalty chip cards – two trillion Euros of value from 19 billion transactions from 90 billion cards – RS Software developed an incentive management program that included:

- Development of privilege cards that would act as special debit cards which can only be used on Chip and PIN POS terminals. These cards include a magnetic stripe but hold the pertinent card number information on the chip.
- Compliance with SEPA to establish a lower interchange fee.
- Facilitate adoption of the program across Europe especially in higher risk countries; e.g., Italy. To date the adoption of the program in Italy has reached 50 percent.

Chip Infrastructure Testing for Subscribing Stakeholders

RS Software leveraged its pool of QA professionals, with a combined experience of more than 100 person years, to plan and implement a chip card infrastructure testing exercise for its subscribing stakeholders.

In order to enhance understanding among all participants in the product testing and approval processes, RS Software worked on a list of test tool providers to assist stakeholders in the chip environment. The idea was to ensure that acceptance problems are identified during development phase and that Chip & PIN cards continue to be accepted during implementation.

RS Software partnered in the maintenance and implementation of many of these tools; e.g., Aconite EMV facilitator, Collis Tools, ATM Simulator et al.

About RS Software

Since its inception in 1991, RS Software has been focused on providing e-payments solutions to its clients and has become the partner of choice for the world's leading payment brands. We have been technology partners to several leading payment organizations across multiple geographies on three continents. We preserve the quality of our solutions through our proprietary RS GEM™ (Global Execution Model) to provide a comprehensive set of services and continuing innovation within the payments domain. The RS Software CoE (Centers of Excellence) oversees the development of new practices within the company and provides the infrastructure necessary for the development of skills.

RS Software, through its tactical and strategic investments towards sourcing, knowledge-retention, and skill-building, has developed a team of payment professionals who are not restricted by vertical, horizontal, or geographical boundaries. Our team of subject matter experts, developers and QA professionals has the technical skills essential for any payment related solution. The team's skills are benchmarked through external certifications such as ITSQB and CSTE.

Our QA team offers customers insights into the latest trends in the process certification space and certification of standards such as ISO 9001, SEI CMMi, and TMMi. The team also provides formal process improvement consultancy through implementation of Six-Sigma and Lean/Kanban methods. These added values from RS Software not only enabled the client to meet stringent timelines but also to maintain a significant edge over competitors through the application of industry best practices.