




# CASE STUDY



## **INTERBANK ATM TRANSACTION** – A CASE OF AUTOMATING TESTING



*Interbank ATM transaction is a complex business needing data verification and integrity check to ensure accuracy. Indium was able to reduce the time and improve efficiency by automating the testing process that was till then being done manually.*

India's move towards cashless payments is not as sudden as it is widely believed to be. Already, the groundwork that would enable inclusive online retail payment had been initiated and the technology needed to facilitate it had been put in place.

One of the services, inter-bank ATM transactions, is a complex process where the systems of the two banks (Issuer and Acquirer) need to talk to each other via a central processing authority, and the entire transaction carried out quickly and without any errors. To ensure that the process was working fine, the technology solution provider needed the transaction trail between the ATM and the two banks tested. Earlier, it was being tested manually and took five days of checking to validate the transaction trail. The manual testers were able to provide only cursory checks because of the volume of data generated by the banks seeking certification.

Aware of the complexity of the testing requirement as well as the advantages of automated testing, Indium approached the client with a proposal to automate the entire process. Indium's deep understanding of how the fintech industry works, the technologies used and the processes followed enabled it to design a solution that could reduce the time taken for verification as well as improve accuracy.

Convinced of Indium's capabilities and credentials, the client commissioned Indium to develop an end-to-end automation solution for the testing process.

## REQUIREMENT

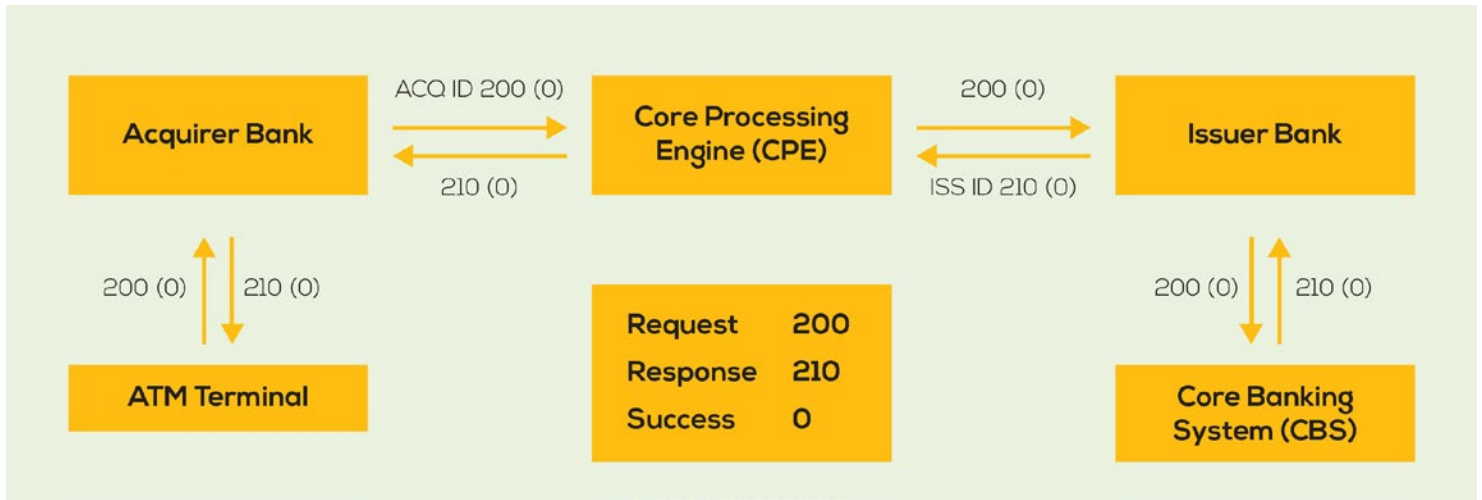
During an inter-bank ATM transaction, the request is triggered at the ATM of one bank. This request is passed on to the bank's back-end system, which talks to the client's backbone system, and then to the back end system of the second bank, and then has to travel back the same way to execute the request. No data is stored on the client's servers, so all data access has to be via temporary files and data queues.

Different applications are activated to service the request, and some of them are located in different servers using different technologies. This could cause a mismatch between the amount being requested and executed. The solution aims to verify the data files of the two banks to ensure they match. Being a financial solution dealing with the personal account of the clients, the need to protect confidentiality is also a prime concern.

As a five-member team took five days to verify data, the main mandate was to speed up the testing process, and to make it comprehensive.

The work requires cross verifying numbers across two to three different applications to make sure that each number has been captured correctly by the transactional system. This requires diligence and comprehensive checking, which was also a challenge when doing manual checking due to the possibility of human error as well as monotony.





## INDIUM SOLUTION

Indium developed the architecture to automate testing for tracing the path the instruction takes from the ATM to the two banks' back end systems without compromising the security.

The data verification process it automated involved:

- Connecting to various databases, retrieving the relevant transactional details and executing queries on the database
- Virtual/Remote connection to various servers

- Accessing the different systems and navigating to the data file in real time
- Downloading the relevant data files
- Parsing the data files, and verifying each line in the files from different servers
- Validating specific digits in each line of data match the expected value based on the business logic.

## INDIUM APPROACH

The Indium solution was designed to be modular for configurability to suit just another such requirement to validate the transactional integrity between two banks but any other financial or banking product as well.

It enables automated testing of manual tasks, thus reducing time and effort.

## TOOLS USED

- Java
- Apache POI
- XSLT
- Log4j
- Socket programming
- OJDBC

## IMPACT

### *Efficiency*

- The time for testing was brought down from 5 days to 13 minutes.
- From 5, the resources were brought down to 2.

### *Effectiveness*

- On an average 750 lines were verified in every data file.
- Specific digits in each line were cross verified in the specified time.

### *Functional Defects identified*

Implementing this automated process test automation helped identify two critical anomalies in the amounts.

- When rounding off, the system had been configured to ignore values less than 0.01. However, a slightly higher value had been ignored.
- In another, service tax had been wrongly captured.

## INDIUM ADVANTAGE

Through this project, Indium was able to demonstrate its expertise in understanding the needs of and the processes and technologies used by the financial and banking industries, its expertise in test automation, and its capability in developing test cases for business processes.

The success of this project also led to Indium winning the trust of the customer and being commissioned two more projects from the client. More than testing, Indium believes in nurturing deep relationships with its clients and addressing their pain points by providing the best solution that can speed up testing while ensuring optimum results. Indium's experienced team, domain expertise and its sensitivity to the confidentiality and integrity needs of the banking and financial technology industries help it become a meaningful partner in offering testing solutions further add to customer experience.





# CONTACT US

## USA

### SUNNYVALE

Suite 210, 1250 Oakmead Parkway  
Sunnyvale, CA – 94085.  
Phone: +1(408) 501-8844  
Fax: +1(408) 501-8808

### ATLANTA

Crown Office Suites  
1870 The Exchange  
Suite 100  
Atlanta, GA – 30339.  
Phone: +1 (770) 989-7302

### PRINCETON

Carnegie Center  
Suite 150, 300 Carnegie Center  
Princeton, NJ – 08540.  
Phone: +1 (609) 786-2423

## United Kingdom

### LONDON

Indium Software  
71-75 Shelton Street  
London, WC2H 9JQ.

### CHENNAI

No.64 (Old N.143), Eldams Road  
Ganesh Chambers Teynampet,  
Chennai – 600 018.  
Phone: +91-44-6606 9100

### BENGALURU

No.100, Kay ARR Royal Stone  
Tech Park, 5th Floor, Pai layout,  
Benniganahalli, Bengaluru,  
Karnataka – 560016.  
Phone: +91-80-4645 7777

## MALAYSIA

### KAULA LUMPUR

Suite 8-1 & 8-2, Level 8, Menara  
CIMB  
No.1, Jalan Stesen Sentral 2  
Kuala Lumpur – 50470.  
Phone: +60 (3) 2298 8465  
Fax: +60 (3) 2298 8201

## SALES INQUIRIES

[americas.sales@indiumsoft.com](mailto:americas.sales@indiumsoft.com)  
[apac.sales@indiumsoft.com](mailto:apac.sales@indiumsoft.com)  
[emea.sales@indiumsoft.com](mailto:emea.sales@indiumsoft.com)  
[india.sales@indiumsoft.com](mailto:india.sales@indiumsoft.com)  
[sales@indiumsoft.com](mailto:sales@indiumsoft.com)

## GENERAL ENQUIRIES

[careers@indiumsoft.com](mailto:careers@indiumsoft.com)  
[info@indiumsoft.com](mailto:info@indiumsoft.com)