



**ADGM**

# **POWERING THE FUTURE OF REGULATION**

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**USE CASES OF REGULATORY TECHNOLOGY**

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# FOREWORD

***From its commencement in 2015, Abu Dhabi Global Market (“ADGM”) has recognised the tremendous transformative potential that financial technology (“fintech”) can have in the Middle East and North Africa (“MENA”) region.***

As a natural hub for trade and commerce at the crossroads of East and West, MENA has been a fertile ground for the experimentation and deployment of financial services across demographic segments. Remittance solutions, robo-advisory, virtual assets and digital banking are but some of the means of democratizing access to financial services in order to service vibrant, growing populations. At the Financial Services Regulatory Authority (“FSRA”), we have been given the opportunity to build regulatory frameworks from the ground up so that we can enable a holistic innovative ecosystem underpinned by a comprehensive legislation.

The COVID-19 pandemic coupled with recent advancements in technology has rapidly accelerated the pace of digital transformation. The availability of scalable, cost-effective cloud infrastructure, the deployment of artificial intelligence and machine learning, the advent of Application Programming Interface (“API”) driven connectivity as well as advances in data science have today enabled the financial industry to transform to a largely digital model.

As noted in the Alliance for Innovative Regulation’s RegTech Manifesto, published in July 2020, “exponentially-changing technology is revving up the velocity of all the activity in the system. The industry’s products are digitising, from loans to investment services. Its delivery vehicles are digitising, shifting to online and mobile channels and into digital currencies. Its risk functions, from loan underwriting to actuarial analysis for insurance, are using new sources of data in new ways. Its ‘back office’ functions are leveraging robotic processing and digital ledgers. Its customer service functions are using chatbots.”

When dealing with such rapid transformation, regulators across the globe can no longer rely on “analogue” information collected periodically through static forms, ex-post reporting and hard-to-scale processes and systems, in order to effectively carry out their functions. Alongside the impact of fintech, the potential for regulatory technology (“regtech”) solutions to transform the regulator has also had a positive impact on the relationship between regulators and the industry.

In the nascent stages of the fintech industry, regulators largely adopted a watch and learn approach. However, in the past few years, the regulator’s role has evolved to look at ways to actively support digital transformation in financial services to achieve better consumer and risk management outcomes via regulatory sandboxes, techsprints and innovation challenges. These initiatives have let regulators better assess

novel digital financial services and refine their risk appetite. Today, we are on the cusp of another evolution for the regulator, where its own processes and systems need to transform to effectively supervise digital financial services. Regulators must adopt and consume regtech solutions that augment their own capabilities to become more proactive in detecting and mitigating new risks brought about by untapped opportunities in a globally connected digital financial system.

At the FSRA, we challenge ourselves to not just stay apace of transformation, but to guide the market in providing safe and robust products. As such, we have participated in raising the bar on international best practices and standards, and have taken inspiration from agile methodologies in order to better respond to new developments in finance. This report sets out the work we have been carrying out with regtech firms from across the globe with the objectives of:

**(i) *Helping regulated financial services firms achieve better compliance and risk management outcomes, while reducing regulatory costs and burden;***

**(ii) *Providing regulators the supervisory tools (“suptech”) to better supervise their markets and firms more effectively and efficiently.***

As you will see from the case studies in this report, our experiences with regtech have allowed us to re-imagine how we interact with supervised firms and the industry as a whole, adding value to our authorisation and supervision processes by letting us proactively identify and appropriately manage risks.

As we participate in making Digital-Regulation-as-a-Service a reality, we have sought to update our written regulations and guidelines, and transform them into interactive components that integrate seamlessly into our digital financial ecosystem. Finally, looking beyond our immediate remit, we have sought to develop monitoring systems that will alert us to risks posed by third-party entities interacting with firms within our jurisdiction.

We welcome your insights and feedback on this report and the initiatives contained within.

**Emmanuel Givanakis**  
*CEO, FSRA*





# EXECUTIVE SUMMARY

***This report describes the FSRA's journey in exploring the use of regtech in the ADGM.***

It sets out a clear definition of regtech – the use of technology to achieve effective and efficient compliance with regulatory requirements – and explains why financial institutions and supervisors are increasingly adopting regtech; largely due to increasing complexity in meeting regulatory requirements.

Since the FSRA envisions regtech eventually becoming an integral part of the financial industry, it has invested in building the ADGM Digital Lab.

By providing financial institutions with an easy path to explore new and innovative technologies, the Digital Lab will be a key enabler for helping financial institutions to adopt regtech solutions.

The report also outlines the FSRA's experience with using regtech through a series of case studies.

**These studies include:**

- (i)** *Virtual Asset Regulatory Compliance - monitoring virtual assets and assist firms in meeting their regulatory obligations when transferring virtual assets;*
- (ii)** *Digital Regulation - using artificial intelligence (“AI”) to provide financial institutions with a more accessible and contextual understanding of its legislation;*
- (iii)** *Client Money Monitoring - exploring a more real-time approach to verifying how financial institutions safeguard their clients’ monies;*
- (iv)** *Monitoring of Third Party Provider of Fintech Services - using new technology to collect key regulatory statistics on a real-time, at-will basis;*
- (v)** *Enabling Trade Finance - collaborating with international government agencies to facilitate the use of digital documents for trade finance;*
- (vi)** *FSRA Connect - implementing a new digital workflow process to streamline the authorization and supervision of firms, and enforcement of breaches of regulations and rules.*

The FSRA will continue to work on operationalizing regtech and looks forward to working with the industry to develop new solutions that can make the process of regulatory compliance simpler, cheaper and more effective for financial institutions.

*The FSRA will continue to work on operationalizing regtech and looks forward to working with the industry.*

# WHAT IS REGTECH?

***Regtech is the use of technology to achieve effective and efficient compliance with regulatory requirements.***

Regtech is not a completely new development, as financial institutions have long used technology to support compliance, particularly for regulatory reporting and risk analytics.

However, modern regtech solutions are intrinsically digital by design. Instead of copying existing manual processes, such solutions replace existing processes with newer workflows that are fit-for-purpose.

Financial regulators also are increasingly adopting technological solutions to support the supervision of financial institutions' compliance. Such supotech solutions are a subset of regtech with a different focus, letting supervisors more effectively monitor financial institutions' compliance with regulatory requirements.

This includes tools such as market surveillance to identify market misconduct as well as means to automate the processing of licence applications.

In general, we see four main areas where regtech solutions can be used to mitigate risk:

- (i) Prudential - e.g. managing capital adequacy, market and liquidity risks;***
- (ii) Conduct - e.g. managing disclosure, customer assets and market integrity risks;***
- (iii) Anti-Money Laundering/Countering Financing of Terrorism ("AML/CFT") - e.g. managing customer due diligence ("CDD") and transaction monitoring risks; and***
- (iv) Operational - e.g. managing reporting, cybersecurity and data protection risks.***

Both financial institutions and supervisors have started adopting regtech because of the increasing variety and complexity of challenges in meeting regulatory requirements.

For example, following the Global Financial Crisis, Basel 3 requirements have required firms to start tracking the state of their liquidity and funding to an unprecedented degree and timeliness. Additionally, an increased emphasis on AML/CFT has driven firms to invest more in solutions to protect themselves against such risks. We expect that this pace of change will be sustained as threats to the financial system continue to be identified.

COVID-19 is a key driver of new challenges. For example, in 2020, the UAE supervisory authorities issued joint guidance to encourage financial institutions to use regtech solutions to the fullest extent possible, since the movement restrictions in place at the time made it difficult to conduct face-to-face CDD<sup>1</sup>. As COVID-19 continues to evolve and change our operating environment, other such challenges will manifest.

Manual processes are no longer a feasible approach for financial institutions because they cannot scale up at the same pace as challenges evolve. For example, digital payments saw a sharp surge in volume during 2020, with real-time payment transactions increasing by 41% globally<sup>2</sup>.

*In 2020, the UAE supervisory authorities issued joint guidance to encourage financial institutions to use regtech solutions.*

<sup>1</sup> <https://www.adgm.com/documents/financial-crime-prevention-unit/notices/fsra-fcpu-uae--supervisory-authorities-aml-guidance-covid-english.pdf>

<sup>2</sup> <https://go.aciworldwide.com/rs/-030ROK804-/images/-2021Prime-Time-Report.pdf>





# WHAT IS REGTECH?

This brought with it a concurrent surge in fraud and AML/CFT concerns. As such, both financial institutions and supervisors face increasing pressure to adopt regtech solutions so that they are able to keep up with the pace of evolution in the industry.

Because of this dynamic, we at the FSRA believe that regtech is a pre-requisite for the industry to transform itself. Digital financial services need digital compliance and digital supervision to be effective. This means that regtech will continue to play an increasingly important role, eventually becoming an integral feature of the financial industry.

## **The ADGM Digital Lab** \_\_\_\_\_

Propelled by this belief, the FSRA has built up not only its own internal digital capabilities but committed to enabling that of the financial industry.

ADGM's Digital Lab was launched in April 2021 to provide a neutral and secure environment to test innovative technological solutions and in doing so facilitate the growth of regtech in the UAE.

Conceived as a one-stop-shop to identify relevant solutions, exchange with market participants and test an initial collaboration, the Digital Lab solves key challenges faced by financial institutions in adopting new technology.

Most notably, the lengthy process of due diligence and procurement prior to the initial trial of new products and solutions, has routinely been raised as an impediment to the innovation process. In addition, the caution exercised by financial institutions' information technology ("IT") teams in opening up their pre-production environment to startup solutions remains a source of delay for product teams looking to bulk up their own capabilities.

Finally the cost associated with integrating new technology modules to legacy infrastructure can be prohibitive and dampen the appetite to develop regtech products as compliance and regulatory functions have traditionally been considered cost centres.

In order to lift these impediments the FSRA has chosen to take an active role in providing a digital sandbox equipped with a full suite of functionalities that allow financial institutions to test fintech and regtech solutions within a secure environment overseen by the regulator.

These include docker images and containerisation tools that allow financial institutions to replicate their core-banking systems in secure, access-controlled containers where they invite startups to deploy their solutions. The FSRA has pre-populated the Digital Lab with synthetic data in order to facilitate testing in full compliance with data protection requirements.

As not all stakeholders within financial institutions have full-fledged IT backgrounds, the Digital Lab was also equipped with low-code workflow tools that enable collaboration. Drag and drop functionalities allow stakeholders from all departments and teams to collaborate together, experimenting with new tech solutions and visualizing how they can interact and improve existing workflows or build brand new products.

Startups, financial institutions, academia and government entities can sign up to the Digital Lab, display their profiles detailing their capabilities on the Digital Lab's marketplace and expose their APIs to the community. APIs hosted on the product marketplace meet best in class security and interoperability standards to connect between the systems of financial institutions and the startups with which they are interacting. As a regulator-led initiative, the Digital Lab is being provided to ecosystem as a public service to enable innovative collaboration.

Within the FSRA, we are utilizing the Digital Lab to trial collaborations with regtech providers that can supplement and enhance our own processes. In addition, we are beta testing supotech solutions within the sandbox prior to deploying in a live environment. Finally, we are exploring cross-border technology solutions in partnership with other regulators to encourage regulatory harmonization processes and international regtech projects.





# CASE STUDIES

***From our regular engagement with the industry, we have found that regtech adoption is relatively nascent amongst firms in the ADGM.***

The most common area where firms have chosen to use regtech is in AML/CFT, given the strong emphasis the UAE places on managing ML/TF risks. However, there remains ample room for firms to explore using regtech solutions for other areas.

The FSRA has taken a forward-leaning stance to help foster the adoption of regtech in the ADGM.

By commissioning our own regtech and supotech solutions, we can help the industry to more concretely understand the benefits of using regtech by seeing what difference these solutions have made.

Additionally, by building infrastructure to support regtech systems, we can reduce barriers to entry by firms.

The following case studies describe the FSRA's work in developing and implementing regtech and supotech solutions.

The FSRA would like to thank and acknowledge the organisations mentioned in this report, for their efforts and contributions to our work.

While the FSRA has successfully collaborated with them on the development of these solutions, it should not be taken as an endorsement of their products or services.

Any interested party exploring a collaboration with them should conduct its own due diligence as appropriate.



## Virtual Asset Regulatory Compliance

***The FSRA recognizes the role and potential of digital assets in facilitating capital allocation and economic transactions in a digital economy.***

In 2018, the FSRA introduced a comprehensive regulatory framework for digital assets, including virtual assets, digital securities and stablecoins. This has created a budding ecosystem that supports the trading and custody of digital assets in the ADGM, with several firms having received a Financial Services Permission to offer digital asset-related services.

Technology neutrality and inclusiveness is a key tenet of our regulatory approach. A digital asset should be subject to the same regulatory requirements as a non-digital asset that provides equivalent economic functions and poses equivalent risks. This creates a level playing field between firms that provide digital and non-digital assets services. Firms providing digital asset services in the ADGM are therefore regulated in the same way as any other financial institution.

We have taken steps to explore how to facilitate positive regulatory outcomes in the digital asset space by using appropriate technology. This case study touches on two main initiatives in regard to market monitoring and compliance with the FATF Travel Rule.

# CASE STUDIES

## **Market Monitoring**

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Firms that trade financial instruments on a multilateral basis are exposed to the risk of market abuse, regardless of the type of financial instrument being traded. Malicious market participants could use false or misleading orders to manipulate the price of a financial instrument, thereby damaging the firm's ability to provide fair and orderly trading. To address market abuse, the FSRA has built systems to conduct market surveillance across all trading venues and across all instruments traded on such venues in the ADGM.

To achieve fair and orderly trading, a trading venue's markets must be resilient to technological disruption. Their systems must be responsive enough to address market participants' activities with an acceptable latency and sound enough to remain functioning even during stressed periods. To monitor firms' uptime and latency, the FSRA will be building a monitoring tool that tracks firms' systems' behaviour and flags them to supervisors if downtime or unwarranted latency should occur. This tool will also include transaction monitoring on the blockchain using blockchain analytics tools.

The FSRA has implemented a Market Surveillance System, which ingests real time feeds of all order and trade data for each trading venue operating in ADGM. The system allows the FSRA to monitor the trading activity across all of the markets in ADGM for any signs of market manipulation or insider dealing, which helps to protect and ensure the integrity of the markets operating in ADGM.

The system has been designed to not only monitor traditional markets but also virtual assets. A first of its kind in this respect, the system required bespoke features to be built in order to cater for this additional asset class.

The system has the unique ability to perform cross market surveillance where an instrument is traded on more than one venue within ADGM. This is particularly relevant for markets who list the same virtual asset trading pairs, such as BTCUSD, LTCUSD, etc. This allows the FSRA to monitor the activity of entities across different markets where the cause and effect of market abuse may be carried out on different venues.

There were three key elements of the system that were carefully considered during the planning and implementation.

**(i) How data is received:** *As data transfers must be consistent and secure, the FSRA has created a custom-made specification based on the FIX protocol. This meant that the FSRA had to define new types of messages and valid data to adequately support all asset classes, including virtual assets. Utilising this protocol ensures that despite data being received by multiple sources, it is always sent in the same format.*

Due to the sensitive nature of the data being received, direct private connections between the trading venue and the FSRA are required. This type of connection is not only robust but also allows for easy scalability as the trading platforms become increasingly liquid.

**(ii) How data is stored:** *When designing the system, the FSRA needed to ensure that the system would be able to cater for an ever-increasing number of data feeds, which could all potentially be sending large amounts of data simultaneously, 24 hours a day. The infrastructure implemented is easily scalable and flexible. Data is also sent to and stored in two discrete environments meaning the system is highly available. Potential system outages, and loss of surveillance coverage, are minimised.*

**(iii) Data processing and front end user interface:** *Working with such a large amount of data led the FSRA to select a provider of high speed, sophisticated database technology to allow for efficient storage and retrieval of data. Alert logic is run on data as it comes into the system generating real time and end of day alerts. The alert types cover traditional market abuse behaviours; however, users can also design alerts allowing the FSRA to target and cover specific market risks.*

The Market Surveillance front end system is a series of dashboards where users review and process the alerts generated has been tailored for the FSRA's needs, this includes a personalised workflow, investigations screens for each alert type, historic data retrieval and a whole host of management analytics tools. The platform provides the user with an overall view of the market as well as the ability to drill down into detail when required, with data presented in both graphical and tabular formats.

# CASE STUDIES

## **Travel Rule**

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The Financial Action Task Force (“FATF”) requires that financial institutions that conduct wire transfers<sup>3</sup> must exchange information on beneficiary and originators (also known as the “travel rule”), so that terrorists and other criminals do not have unfettered access to wire transfers for moving their funds and that such misuse can be detected when it occurs.

In 2018, the FATF updated its guidance to clarify that transfers of virtual assets would also be subject to the travel rule. Many virtual asset service providers (“VASPs”) have found it challenging to comply with the travel rule as collecting such information has not historically been required; indeed, anonymity has often been a selling point of some virtual assets.

Compliance with all provisions of the Anti-Money Laundering and Sanctions Rules and Guidance Rulebook (“AML Rulebook”) has been a feature of the FSRA’s virtual asset regulatory framework from day one. Since FSRA-regulated firms dealing in virtual assets are treated in the same way as any other financial institution, they are obliged to conduct customer due diligence on all persons that they do business with.

As a result, FSRA-regulated firms face significantly fewer challenges in complying with the travel rule when transferring virtual assets to other FSRA-regulated firms as they are already required to collect such information. However, this is not the case when FSRA-regulated firms deal with VASPs based in other jurisdictions, who may not have the appropriate processes in place. To this end, the FSRA has worked with software providers to explore the use of technological infrastructure that could help FSRA-regulated firms comply with the travel rule for cross-border transactions.

### ■ **Notabene Testnet**

Notabene provides a compliance platform for virtual asset transactions. It provides tools and analytics to assist virtual asset firms in managing regulatory and counterparty risk. Notabene’s testnet allows virtual asset firms to access the Notabene platform to execute simulated transactions. Through these transactions, virtual asset firms can explore common travel rule scenarios, such as missing beneficiary information.

<sup>3</sup> As defined by the FATF, a wire transfer is a “transaction carried out on behalf of an originator through a financial institution by electronic means with a view to making an amount of funds available to a beneficiary person at a beneficiary financial institution.”

As a result, virtual asset firms can gain confidence in their ability to comply with the travel rule as well as identify areas for improvement in their compliance processes.

Building on Notabene's work, we collaborated with it to conduct a cross-border testnet between the ADGM and Singapore. The objective of the cross-border testnet was to prepare participants for compliance with the travel rule by allowing them to test compliance in a low-risk, collaborative environment. This lets participants identify gaps and refine their existing processes to address these gaps.

Notabene and ADGM conducted the cross-border testnet in August 2021. Of the eight participants, four were FSRA-regulated firms while the other four were virtual asset firms based in Singapore. Over two sessions, the participants conducted simulated transfers of virtual assets in multiple scenarios that were both in compliance and not in compliance with the travel rule. In particular, participants validated cross-border scenarios where the regulatory requirements differed between jurisdictions. For example, in Singapore, transfers of less than S\$2,000 only require the name and account numbers of the originator and beneficiaries to be exchanged, while in the ADGM, all transfers must be linked to a known source and destination of funds.

The participants appreciated the opportunity to use the cross-border testnet. The Notabene solution offered a clearer picture of how travel rule compliance might be achieved. Several discussion points were raised, including the treatment of fiat transfers using the blockchain as well as the need for a standardized way to communicate exceptions between participants. The FSRA's presence as an active collaborator was useful for participants, as they were able to interact with supervisors to better understand requirements.

### ■ Project Voyager

Securrency builds platforms and infrastructure for financial and regulatory technology. Given its close proximity and understanding of the ADGM's regulatory framework, the FSRA is collaborating with Securrency to develop a proof-of-concept ("Project Voyager") to facilitate the automation of FSRA-regulated firms' compliance with the travel rule. To do so, Securrency has extended its existing technology platforms to



# CASE STUDIES

support the automated exchange of travel rule information in a low-cost, low-risk environment.

The objectives of Project Voyager are threefold:

**(i) Public good:** *The initial costs of building technological infrastructure may be too high for any one firm to bear. As such, a public-private partnership can help build a public good that the industry can adopt, thereby reducing barriers to entry for such firms.*

**(ii) Compete on service:** *When operationalized, Project Voyager could level the playing field for firms, letting them focus on innovation and service delivery because there will be a high baseline standard of compliance. This will let firms compete on how well they can serve customers, rather than on how efficiently they can meet regulatory requirements.*

**(iii) Reduce risk:** *By providing secure means of transaction monitoring to the regulator, Project Voyager could help detect illicit activity and, where needed, provide the information needed for regulators to intervene proactively. This will help reduce overall risk to the financial system.*

We found Project Voyager to be a useful complement to the cross-border testnet. As an exercise in developing proof-of-concept infrastructure, Project Voyager let the FSRA and Scururrency envision a potential long-term architecture for verifying identities across the industry.

In contrast, the cross-border testnet used an existing system with operational or near-operational virtual asset firms that allowed identification of short-term issues that firms face with Travel Rule compliance. In combination, both collaborations have taught us much about how to facilitate FSRA-regulated firms doing business with firms or customers outside the ADGM which may have differing requirements when complying with the Travel Rule.

## **Learning Points** \_\_\_\_\_

The FSRA has learnt much from these efforts in virtual asset regulatory compliance. By obtaining direct feedback from practitioners, we have been able to refine our understanding of issues more effectively. In particular, the iterative process

of discussion has helped us clarify our positions and foster a collaborative spirit amongst participants.

A key learning point for us has been the need to start small and scale up. The tight scope of the cross-border testnet let us work with Notabene to rapidly conceptualise, conduct and conclude it within a short span of three months.

Our experience with the cross-border testnet, has made us better able to advise all FSRA-regulated firms on common issues that they may face. Additionally, the exposure to a solution such as this offers firms another option that they can use to achieve Travel Rule compliance.

Another key learning point from our collaborations has been the need to be tech agnostic. Project Voyager was built from the ground up to be regulator-centric, taking into account the needs of the regulator, and so is extensible to support prevailing industry standards. This will ensure that we are able to migrate to different infrastructure providers if necessary, rather than be locked into a single firm.

*A key learning point for us has been the need to start small and scale up.*

# CASE STUDIES

## B.

### Digital Regulation

**Regulations, rulebooks and guidance provide a way for regulators to communicate what is required or expected of an individual or firm to undertake financial services in a safe, fair and robust manner.**

Taking into account the wide ranging scope, nature and complexity of activities in today's heavily regulated financial services sector, the breadth and depth of regulatory requirements that the regulator needs to cover within the legislative framework can be enormous.

For a fintech start-up looking to understand this rules for the first time, that is a challenging task, in terms of which regulation or rule applies, how it applies and what information the firm needs to provide the regulator.

For larger financial firms that operate in multiple jurisdictions, this becomes an even more complex task.

For instance, **Figure 1** below is a paragraph from the FSRA's Conduct of Business Rulebook ("COBS Rulebook").

#### ■ Definitions....concepts.....and links Conduct of Business Rulebook

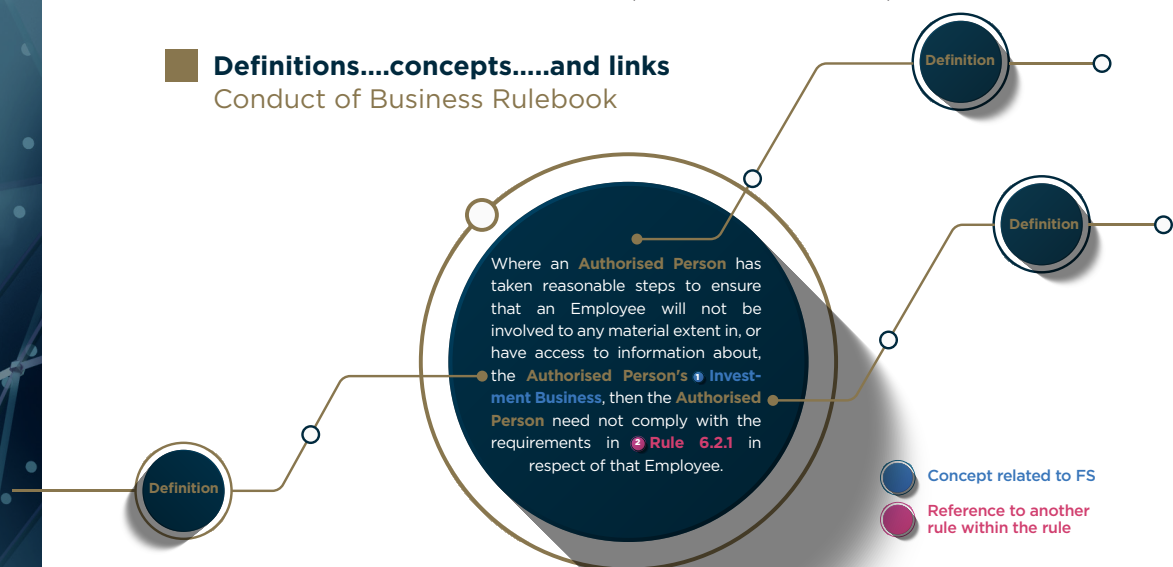


Figure 1 | Paragraph from COBS Rulebook

Within the same paragraph, there are definitions, concepts, linkages and references to other rules that the reader will need to take into consideration, as shown in **Figure 2**.

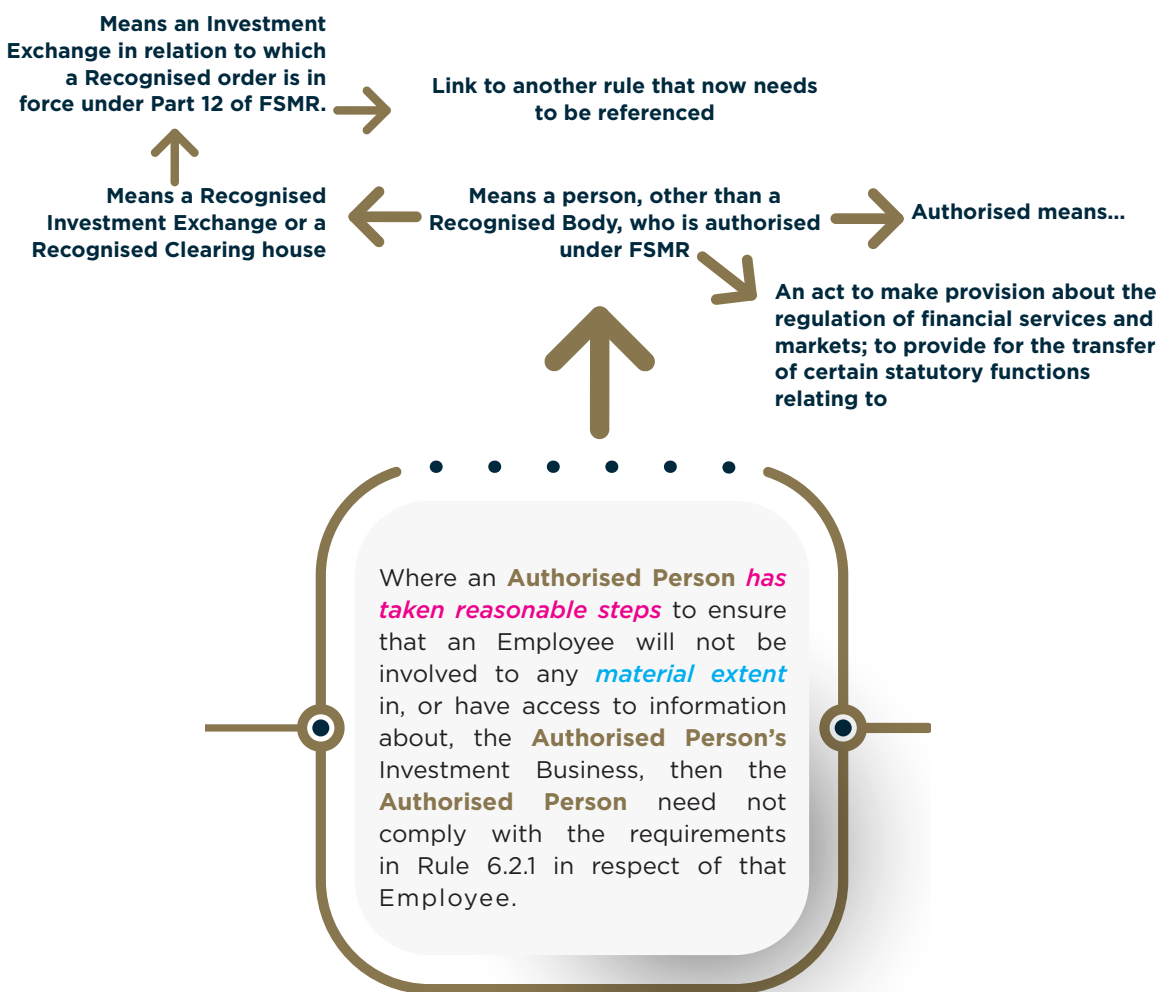


Figure 2 | Annotated paragraph from COBS Rulebook



*Behavior expected within this specific context, to mitigate the perceived risk*



**Legal Concept**

*An item of evidence is said to be material if it has some logical connection to a fact of consequence to the outcome of a case. Materiality, along with probative value, is one of two characteristics that make a given item of evidence relevant. This largely depends on the elements of the cause of action the plaintiff seeks to prove, or that the prosecutor must prove in a criminal case to secure a conviction.*

# CASE STUDIES

## ***Regulatory Knowledge Graph***

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One measure that the FSRA has been developing in order to address some of these issues is to provide the rulebooks in a more accessible and digestible manner.

In December 2019, FSRA initiated a Proof of Concept (“PoC”) with ClauseMatch leveraging the use of knowledge graphs to help external stakeholders better navigate our regulations and rules.

An AI-powered regtech platform, ClauseMatch provides end-to-end policy management and regulatory compliance solutions.

Knowledge graphs present relevant pieces of information in a structured network graph, providing holistic insights into the interrelations between topical concepts and domains. The ADGM regulatory knowledge graph will enable the FSRA regulations, rules, policy, entities and relations to be described with much more context.

A clear overview of all information and relationships will greatly help businesses understand what regulatory requirements apply to them, why the requirements are important, and how the requirements relate to them.

The first step in the PoC was to train the AI models to read, understand and classify the regulation and rule. This was achieved by feeding in over 20,000 examples for the A.I to classify. This was followed by a series of exercises to fine-tune the models by confirming or rejecting selected examples i.e. supervised machine learning.

Using the ClauseMatch solution, the documents were then read by the AI model, which assigned one of seven pre-defined classifications, or tags, to a word or sentence that it identified as a relevant concept.

Figure 3 below is an example of the tags, applied by the AI to the FSRA’s Guidance and Policies Manual.

governance structures in place to avoid or mitigate actual or potential conflicts of interest between its custody functions and any other activities or functions within itself or with other Group entities. Such governance arrangements may include having a separate team, which does not have other conflicting responsibilities within the firm, handling custody.

[ACT]carry on [TECH]crypto... [ENT]client [TECH]operat... +11

151) To assist with ring-fencing and to reduce potential conflicts of interest, an Applicant that wishes to operate as a Crypto Asset Custodian and concurrently provide other OCAB or conventional Regulated Activities should consider the merit of establishing a separate, standalone legal entity for its Crypto Asset Custodian activities.<sup>40</sup> If so established, this standalone entity would need to apply to the FSRA for its own FSP to carry on the Regulated Activity of Operating as a Crypto Asset Custodian.

[DEF]asset [ACT]to custody [PROD]crypto... [TECH]crypto...

**Other Requirements Pertaining to Custody of Crypto Assets**

Governance

[TECH]private... [TECH]accept... [FS]operate [ACT]withdra... +15 #

152) OCAB Holders operating as Crypto Asset Custodian just a sole party or signatory is able to complete Accepted Crypto Assets or Client Money held under custody must not have custody arrangements whereby the Accepted Crypto Assets held under custody help reduce potential key person risk such as the access to private keys.

[TECH]accept... [TECH]inform... [FS]operate [ACT]withdra... 153) OCAB Holders operating as Crypto Asset Custodian between all authorised parties or signatories who withdrawal of Accepted Crypto Assets or Client Money provide information on these mitigating controls

[TECH]accept... [FS]operate [ACT]withdra... [ENT]authoris... 154) OCAB Holders operating as Crypto Asset Custodian all past and present authorised persons who were complete the transfer or withdrawal of Accepted Crypto Assets or Client Money held on behalf of Clients. In addition, OCAB Holders must have clearly defined policies and procedures to revoke the authority granted to these persons.

[FS]operate [TECH]crypto... [ENT]firm [TECH]policy... +15

155) OCAB Holders operating as Crypto Asset Custodians are required to have policies and procedures that clearly describe the process that will be adopted in the event that it knows or suspects Accepted Crypto Assets or Client Money it is holding under custody on behalf of Clients is compromised, such as in the event of a hacking attack, theft or fraud. Such policies and procedures detail the specific steps the firm will take to protect Clients' Accepted Crypto Assets and Client Money in the event of such incidents. Crypto Asset Custodians should also have the ability to immediately suspend transactions with regard to the Accepted Crypto Assets and Client Money.

[ENT]regulator [ENT]client [ENT]broker

[ENT]chapter [ENT]investor [ENT]market participant

[ENT]beneficiary [ENT]group [ENT]component

[ENT]customer [ENT]officer [ENT]vendor

[ENT]employee [ENT]service provider

[ENT]responsibility [ENT]crypto asset broker

[ENT]member [ENT]exchange [ENT]institutional

[ENT]institutional client [ENT]conventional member

[ENT]recognise [ENT]recognise body [ENT]issuer

[ENT]trader [ENT]company [ENT]retail client

[ENT]firm [ENT]sole party [ENT]many participant

[ENT]issuer [ENT]crypto custodian [ENT]custodian

[ENT]fiat custodian [ENT]licensed director

[ENT]compliance officer [ENT]recognize person status

[ENT]applicant

AutoTag: Financial Service

[FS]operate [FS]authorisation [FS]asset [FS]value

[FS]capital [FS]trade [FS]account [FS]investment

[FS]unit [FS]market [FS]crypto [FS]catch

[FS]regulator [FS]exclusion [FS]operating

[FS]order [FS]facility [FS]obligation [FS]material

[FS]fund [FS]chapter [FS]investment business

[FS]fee [FS]capitalisation [FS]maturity [FS]item

[FS]amount [FS]insurance intermediation

[FS]investor [FS]position [FS]multiple country

Figure 3 | AI-tagged regulatory document

The first step in the PoC was to train the AI models to read, understand and classify the regulation.

# CASE STUDIES

This tagging exercise automatically created linkages and interdependencies throughout the documents, and stored this information in the ADGM knowledge graph, enabling the regulatory requirements and interdependencies to be visualized in a holistic perspectives.

For example, a fintech looking to provide a new service or product is able to instantly see what sections of regulation or rule is applicable across multiple legislation and in what manner they interlink.

The following visualization in Figure 4 is a small section of the ADGM knowledge graph looking at where references to financial products are mentioned, and importantly, why so. The turquoise nodes represent tags that have been assigned to the AML Rulebook. The blue nodes represent the tags assigned to the COBS Rulebook.



**Figure 4 | ADGM knowledge graph**

What can be seen in this example is where the two documents are linked by the references to financial products (the pink nodes) and the relevant sections from each document (the yellow nodes).

Besides providing clarity on the requirements when setting up a new financial product or service, it also clarifies how certain aspects of conduct (with regard to a financial product) and money laundering are interlinked. It is from understanding the relationships between those objects that the useful insights can be gleaned, helping the user to appreciate the importance and wider context of these particular regulatory requirements.

Not only does the knowledge graph presents information stored within a regulation, it unlocks the ability to extract insights and context from other domains and understand its relationship to the regulation. It allows regulation to be contextualized from multiple different perspectives.

### ■ Next steps

This next phase of work currently underway is to provide a user interface so that people can use the solution, and to provide APIs enabling fintechs to develop apps and programmes to test their solutions automatically for compliance against regulatory requirements.

Leveraging the FSRA's digital legislation initiative, we are also collaborating with RegGenome, a Cambridge University spin-off, to develop an AI solution that will help financial institutions develop knowledge graphs to analyse the regulatory regime and create a compliance framework for any jurisdiction. This will enable firms to scale from one jurisdiction (e.g. ADGM) to another.



# CASE STUDIES

## ***Smart Guides***

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Another measure that the FSRA has undertaken to reduce complexity and help firms navigate its regulatory requirements and expectations is the creation of Smart Guides using the ClauseMatch platform.

Smart Guides enable us to link multiple applicable rules directly to a written sentence within a summary, enabling the regulator to maintain both the readability of guidance and the integrity of the read-across to relevant rules.

The first of which, focused on how to conduct Know-Your-Customer using electronic means (“eKYC”), has been published on the ADGM Digital Lab for firms to interact with.

## ***Regulatory Chatbot (“RegBot”) for Licence Application***

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In March 2019, the FSRA piloted an initiative to help potential applicants better navigate the licence application process and reduce the turnaround time for regulatory approvals.

In collaboration with Nexus FrontierTech, an AI solutions firm specialising in modernising data-intensive processes within the regulatory compliance space, the FSRA developed a RegBot that potential applicants could interact with when applying for the licence online.

Powered by natural language processing and machine learning, the RegBot identified and clarified information and risk gaps in the application as it assessed the applicant’s readiness to proceed. A draft application form was automatically completed for the applicant. At the same time, an assessment report was generated for the FSRA’s review.

This increased business efficiency for all stakeholders, while ensuring compliance with the FSRA's regulation and rules. To train the RegBot, the FSRA input keywords within its licensing regulation and rules, and the corresponding questions within the application forms. Sample answers from previous applicants were also provided to facilitate RegBot's questioning process. During testing, the RegBot flagged the application if keywords were not mentioned and raised further questions accordingly.

Applications with issues being flagged will show up in the backend portal where FSRA officers are able to retrieve and take follow-up action if necessary.

Following the successful pilot, the FSRA is exploring integrating the RegBot with the regulatory knowledge graph to broaden the areas that the RegBot can deal with.

*Applications with issues being flagged will show up in the backend portal where FSRA officers are able to retrieve and take follow-up action.*

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# CASE STUDIES



## Client Money Monitoring

***The collapse of regulated financial services firms such as Wirecard and MF Global demonstrated that it is not sufficient to place reliance on audit firms as a source of assurance on a regulated firm’s controls for safeguarding client money and investments. These scandals had some similarities in that:***

- (i) money was moved from different accounts to cover up mismanagement or misappropriation; and*
- (ii) the auditors signed off on their assurance reports after observing that money was in the ring-fenced client accounts during the period of the audit, but did not investigate further to see if the money had always remained in the client accounts or whether they had been used for purposes that were unauthorized.*

The FSRA therefore looked into developing a more pro-active solution for protecting client money. This solution should let regulators automatically monitor, flag and reconcile potential issues with how licensed firms manage and safeguard client money held in client accounts, in compliance with FSRA’s regulations and rules. Successfully implementing a client money monitoring solution would benefit licensed firms by improving their risk management outcomes and potentially reducing their regulatory reporting burden in the longer run.

## ***Proof of Concept***

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We developed a PoC solution with one of the firms in the FSRA's RegLab (regulatory sandbox regime), DAPI Ltd, using synthetic data. The PoC resulted in the development of a regulatory dashboard that provided an overview of licensed firms' bank accounts, which were linked through DAPI's technology. This demonstrated that the FSRA could independently obtain data via API calls from the licensed firms' bank accounts.

DAPI also built an integration with Quickbooks as a sample accounting package that several licensed firms use. The integration would let DAPI automatically pull information on client transactions as recorded by licensed firms and match this information against the corresponding records of client money holdings. This automatic extraction of licensed firms' accounting data meant that the process of reconciliation would be much more efficient for licensed firms without increasing their reporting burden. The FSRA could then view the client transactions as well as any differences between the information pulled via DAPI's APIs from the licensed firm's bank account records vis-a-vis the information in their internal accounting package.

The dashboard also had an issue-management functionality for the FSRA to manually flag such reconciliation discrepancies and follow up on these with the licensed firm for resolution. The licensed firm could respond to the FSRA through this functionality to provide clarifications and close out the issue.

*We developed a PoC solution with one of the firms in the FSRA's RegLab (regulatory sandbox regime), DAPI Ltd, using synthetic data.*

# CASE STUDIES

## ■ Next steps

The FSRA is now exploring building out this PoC further to focus on a production-ready dashboard solution where we aim to:

**(i)** *Ensure that connectivity to licensed firms' bank accounts expands beyond screen-scraping technology to other types of connectivity;*

**(ii)** *Build out connectivity to multiple accounting packages, in addition to Quickbooks;*

**(iii)** *Introduce a controls and alerts system that can proactively identify and escalate issues regarding any disparities or errors between licensed firms' client money account balances and their internal ledgers;*

**(iv)** *Further enhance the issue management system from a user experience perspective; and*

**(v)** *Use machine learning to analyse data on firms' client account balances and the issues flagged by the controls and alerts system at the firm level as well as at an aggregated level (e.g. by type of firms), which could then feed into the supervisory profile of licensed firms.*

The FSRA has leveraged the ADGM Digital Lab platform to post this problem statement out to Fintechs as part of the FinTech Abu Dhabi Innovation Challenge 2021<sup>4</sup>.

We are evaluating applications to enhance the client money monitoring solution. Once the solution is implemented, we would also look towards employing it to monitor a licensed firm's regulatory capital accounts, in due course.



## Monitoring of Third Party Provider (“TPP”) Fintech Services

***In April 2021, the FSRA updated its regulatory framework to allow for the authorization and supervision of TPPs.***

TPPs are firms that intermediate the relationship between customers and their financial institutions. By providing new and innovative services, TPPs can help customers manage and use their own data more effectively when undertaking financial transactions.

While TPPs are often associated with open banking in other jurisdictions, the FSRA’s framework is designed to support the growth of open finance. The FSRA has taken a data-centric approach in designing the framework by focusing on Specified Information, which is information that the FSRA may prescribe as being important enough that its accessing, processing and transfer should be subject to regulation.

Given the nature of their business model and services, the FSRA has placed strong emphasis on TPPs’ ability to manage and mitigate technology risk. In particular, the FSRA has required that TPPs must take such steps as directed by the FSRA to demonstrate the safety and integrity of their systems that interface with customers and other financial institutions.

Additionally, TPPs are required to ensure that such systems comply with any technical standards that the FSRA may prescribe.



# CASE STUDIES

## *Digital supervision*

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The FSRA recognizes that traditional means of supervision may, over time, become less relevant for managing technology-centric financial institutions such as TPPs. In this regard, the FSRA intends to place greater emphasis on digital supervision for TPPs. This means that where possible, supervisors should rely on the use of automated tools to verify whether TPPs are operating in compliance with their regulatory requirements.

Such an approach is not intended to replace supervisors, whose knowledge and experience of a firm can never be fully automated away. Instead, the objective of digital supervision is to ensure that supervisors' and compliance officers' valuable time is focused on more complex tasks that require human intervention and understanding of ambiguity, rather than on repetitive tasks that add less value.

Operationalising digital supervision will require much time and effort. While appropriate digital tools need to be developed, a larger challenge will be to convince supervisors of the need and value of such tools. This change management process will require much engagement to change mindsets as well as clear proof of value. Furthermore, financial institutions must put in place the appropriate systems and infrastructure to provide the data needed to effectively conduct digital supervision and such a commitment will cost firms time and money.

Nonetheless, the FSRA believes that digital supervision is a necessary step for regulators to take. Digital problems require digital solutions and the speed and complexity of some tech-centric firms' operations means that traditional means of supervision may only be sufficient to take reactive action, instead of being able to identify and pre-emptively address potential risk situations. As such, the FSRA is embarking on a journey to trial out the use of such tools.

## Monitoring of TPP services

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In this regard, the FSRA is preparing to put in place an automated means of monitoring TPPs' services. In other jurisdictions, TPPs are typically required to report various management information statistics ("MIS") such as the number of times their services are used or how many users have been using their systems. These statistics are commonly reported on a periodic basis (typically monthly), similar to other types of regulatory reporting by financial institutions.

While such a traditional approach to reporting has served regulators well in the past, the rapid nature of technological change may render it less useful in the future. In particular, there are three key challenges to such an approach:

**(i)** *The periodic nature of such reporting means that changes to firms' operating conditions may go undetected for a prolonged period. Should financial institutions experience a sudden drop off in the utilization of their services or experience repeated but non-severe incidents, the regulator may not become aware of this until the next reporting period. This reporting lag could be protracted, not including the time needed to generate, analyse and collate the reports.*

**(ii)** *Regulators typically require that financial institutions submit reports in a specific format, so that such data is comparable across financial institutions. However, the meaning of the data as prescribed by regulators may not always be the same as the meaning of the data that the firm uses for its internal purposes. For example, regulators may require that financial institutions aggregate data at a MENA regional level, but the regulator's definition of what countries are in MENA may differ from the financial institutions' own models.*

**(iii)** *Even if the regulator has well aligned data definitions with financial institutions, differing reporting periods may mean that firms cannot reuse the same data that they provide to regulators. For example, a financial institution may conduct its internal reporting aggregated on an end-of-week basis, whereas the regulator may do so aggregated on an end-of-month basis. This means that the data produced by the firm for regulators cannot be used for internal reporting purposes as it will not be comparable.*



# CASE STUDIES

Given these challenges, the FSRA has decided to take a different approach towards reporting of TPP management information statistics. Instead of requiring periodic reporting, the FSRA intends to require that firms provide the necessary infrastructure to support reporting on an at-will basis. Practically speaking, this means that instead of firms pushing data to the FSRA, they will need to develop the appropriate infrastructure to allow the FSRA to pull data whenever it is required.

This approach addresses some of the challenges raised by the traditional periodic reporting approach. It solves the issue of reporting lag, as the FSRA will be able to access data only when needed. To address the issue of format, the FSRA intends to require that data be provided at a granular level that is better aligned with firms' own data requirements. Additionally, by requiring financial institutions to provide data at-will, the issue of needing to create multiple datasets for management vs regulatory reporting is addressed, as the financial institution will need to create the appropriate systems to automate such provision.

The FSRA has chosen to use TPP MIS as the testbed for such reporting because it is unlikely to need significant aggregation or calculation. As such, TPPs are more likely to be able to provide such an at-will capability for such data than for other types of reporting.

## ***Technical implementation*** \_\_\_\_\_

The FSRA is developing an API specification for TPPs to implement for reporting MIS (the "MIS API"). This specification is written in conformance with the OpenAPI 3.0 specification, creating a machine readable way to describe the required functionality that TPPs are expected to implement. The MIS API should be exposed through RESTful web services, which should be made accessible to the FSRA via the Digital Lab<sup>5</sup>. This will enable the FSRA to view the state and health of all TPPs on a real-time basis through a dashboard on the Digital Lab. While such capabilities may be challenging for traditional financial institutions to implement, the FSRA expects that tech-centric firms like TPPs should be able to implement the MIS API relatively quickly and efficiently.

<sup>5</sup> In terms of design and governing rules, there are currently two widely-used types of API methodologies in the financial services industry. Please refer to FSRA's regulatory guidance on APIs  
<https://www.adgm.com/documents/legal-framework/guidance-and-policy/fsra/adgm-fsra-guidance-on-api14102019-.pdf>

To help TPPs in visualizing how such an API might be implemented, the FSRA has also developed in-house a sample set of API endpoints that implement the MIS API for a sample data set. These endpoints will be made accessible via the Digital Lab for TPPs, so that they can directly experience the FSRA's expectations for the MIS API.

The MIS API specification will continue to be developed in conjunction with industry feedback. It is not feasible for the FSRA to be the sole developer of the MIS API specification as the FSRA's core competency is not API development. As such, industry feedback will be required to ensure that the MIS API specification is fit for purpose, continues to collect relevant MIS and is feasible for TPPs to implement. Nonetheless, the FSRA will continue to play a role in developing the MIS API specification to ensure that it remains abreast of the challenges that TPPs face.

### **Learning points**

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The FSRA has learnt a significant amount from this exercise by directly experiencing the challenges that a TPP might face in interpreting and implementing the MIS API specification. By developing the MIS API specification, the FSRA will be able to specify the specific granular information that it requires to maintain oversight across all TPPs. At the same time, developing and deploying the sample set of API endpoints has given the FSRA a better understanding of the operational challenges that an FI might need to go through to implement such an API.

Looking forward, the FSRA intends to explore additional means of handling digital supervision for TPPs. This could include requiring TPPs to undergo periodic conformance tests, to ensure that the services that TPPs provide meet certain minimum criteria for security and latency, as well as conform to a common standard for accessing other financial institutions. In this regard, the experience of implementing appropriate solutions for monitoring TPPs will stand the FSRA in good stead when the time comes to expanding the scope of digital supervision.

<sup>5</sup> <https://www.adgm.com/documents/legal-framework/guidance-and-policy/fsra/adgm-fsra-guidance-on-api14102019-.pdf>

# CASE STUDIES

## **E.** Enabling Trade Finance

***As an international financial centre, ADGM works hard to enable seamless and efficient trade finance.***

ADGM's English common law legal framework and courts are a significant enabler that provides trade finance participants with legal certainty over their dealings. The availability of trade finance houses both within the ADGM and on the UAE mainland also provides a wealth of financing options for exporters and importers.

In February 2021, ADGM enacted the Electronic Transactions Regulations 2021 ("ETR"). The ETR are based on the United Nations Commission on International Trade Law ("UNCITRAL") Model Laws on Electronic Transferrable Records ("MLETR") and provide legal certainty on the recognition of transferrable documents and instruments in electronic form, such as bills of lading or promissory notes. When the ETR was enacted, ADGM became the third jurisdiction in the world to have implemented the MLETR into law. With the ETR in place, firms operating in the ADGM have legal certainty over the validity of electronic trade finance documents.

Verifying the authenticity and provenance of trade finance documents is essential for trade finance participants. Even when using physical documents, participants may behave fraudulently by forging documents or by pledging the same documents to multiple financial institutions. Because electronic trade finance documents are more easily duplicated, similar challenges apply but it may be even harder to determine the authenticity or provenance of such documents.

Managing authenticity and provenance creates significant cost for financial institutions. As part of their internal compliance processes, they will need to ensure that appropriate due diligence is done on trade finance documents. This is time-consuming and expensive for physical documents and challenging to effect for electronic documents.



## ***Collaboration with Singapore's Infocomm Media Development Authority ("IMDA")***

As part of the ongoing collaboration between Abu Dhabi and Singapore, the FSRA had engaged IMDA on a potential solution that can help trade finance participants.

Since Singapore is another jurisdiction that has implemented the MLETR into law, it is a natural partner for ADGM to work with. As a result, both the FSRA and IMDA agreed to collaborate on a PoC to explore such solutions. The specific solution that the FSRA engaged IMDA on was TradeTrust, a framework for supporting the management of electronic trade finance documents.

TradeTrust comprises a holistic set of enablers, from a strong legal framework grounded in Singapore's implementation of the MLETR to a series of technology components that automatically validate the authenticity and provenance of trade finance documents.

With TradeTrust, trade finance participants can reap the benefits of electronic trade finance documents while still being able to conduct effective due diligence. To achieve automatic validation of electronic documents, the TradeTrust framework uses smart contracts.

When an electronic document is issued, the issuer will register its contents using the smart contract. This process, which is similar to that for issuing a non-fungible token ("NFT"), assures recipients that the document has been created by a known issuer and that its contents are unique.

By using the TradeTrust framework, participants can register any changes of ownership or control and easily trace the history of ownership. This provides assurance that the document has not been furnished to multiple recipients, as only one person can be registered as the owner or controller at any one time.

# CASE STUDIES

## ***First phase of collaboration*** ---

When setting the parameters of the collaboration, the FSRA and IMDA were well aware of the risks of PoC fatigue. In the trade finance space, many PoCs have been conducted but not quite as many have been brought to operational use.

As such, it was essential for the FSRA and IMDA to put in place a roadmap for collaboration, with an end goal of normalizing the use of electronic trade finance documents for trade between the UAE and Singapore. As a start, the first phase of the collaboration was planned to be a technical roleplay between participating banks, both in the UAE and in Singapore.

The technical roleplay was built around the exchange of simulated bills of lading, which are a foundational document for trade finance. In subsequent phases, the FSRA and IMDA will use the lessons learnt to build up to supporting a live transaction and eventually operationalizing the use of TradeTrust. The objective of the technical roleplay was to familiarize participating banks with the use of the TradeTrust framework.

To save time and effort, the roleplay leveraged on IMDA's reference implementation of the TradeTrust framework. The reference implementation allows participants to use the basic functionality of the TradeTrust framework, but does not provide additional features such as authentication or user management that a commercial implementation might provide.

However, since the reference implementation is readily available as a web-based system that requires minimal integration with bank systems, the tradeoff in functionality was deemed appropriate.

The technical roleplay was conducted in two phases between three banks - Emirates NBD and DBS in one phase and Standard Chartered in the other - between September and October 2021. These banks were chosen as representative of common types of trade flows between Singapore and the UAE.

The roleplay between Emirates NBD and DBS shows how a trade finance flow would be processed between a UAE-headquartered

and Singapore-headquartered bank respectively, while the roleplay between Standard Chartered shows how a large global bank may choose to conduct intra-group trade finance flows. By participating in the technical roleplay, these banks were able to build confidence in the TradeTrust system and lay the groundwork for potentially conducting a live transaction.

### ***Learning points***

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A key learning point from the PoC was the significant challenges that banks face in integrating new systems, regardless of how small these integrations were. For example, corporate IT security policies precluded some banks from installing necessary browser extensions for interfacing with the reference implementation or from whitelisting the reference implementation's website. In this regard, the FSRA will continue to work on improving the functionality of the ADGM Digital Lab, to help banks in reducing the need for systems integration.

More importantly, the FSRA has gained a better appreciation for the challenges faced by trade finance participants. The exchange of bills-of-lading is a foundational exercise for trade finance, but requires clearly defined steps and processes so that banks' internal compliance processes can be met. The learning from this PoC will help the FSRA improve its ability to provide trade finance enablers for participants.

*The FSRA will continue to work on improving the functionality of the ADGM Digital Lab, to help banks.*

# CASE STUDIES



## FSRA Connect

***The FSRA's regulatory mandate includes the commitment to foster, promote and maintain a fair, efficient and responsive regulatory environment for our market participants and stakeholders.***

Its core responsibilities include the authorization of firm applicants, the supervision of authorised firms and enforcement of FSRA regulations and rules. In its approach to regulation and supervision, FSRA adheres to a set of clear regulatory objectives, underpinned by inclusive principles, regulations and rules with which applicants and licensed firms must comply.

The FSRA's procedures are process and documentation-driven, and reliant upon the completion of application forms, regulatory returns, or responses to specific queries. Therefore, in furtherance of ADGM's drive towards digitalisation, and with efficiency and the overall user experience in mind, the FSRA sought to implement a financial regulatory platform, "FSRA Connect", to automate the underlying processes and procedures within the core areas of authorisation, supervision and enforcement.

FSRA Connect aims to:

- (i) Provide electronic capability for interaction (portal access) with applicants and licensed firms for authorisation, supervision and enforcement functions;***
- (ii) Establish the strategic capability for FSRA's authorisation function, including workflows to track, manage, document and report key performance indicators and completion of requirements;***
- (iii) Establish the strategic capability for the FSRA's ongoing supervision work. This includes workflows to manage and track entity risk review, onsite reviews, offsite analysis, approvals and interpretations. It also includes risk and business intelligence ("BI") capability and management reporting;***

**(iv) Establish the strategic capability for FSRA's enforcement function, including workflows to track, manage, document and report on enforcement activities; and**

**(v) Integrate enterprise wide contact management system with data management and case management to support authorisation, supervision and enforcement.**

FSRA Connect has been designed with the user experience at the forefront, and the FSRA anticipates that the platform will present a number of advantages. FSRA Connect will allow the submission of draft regulatory business plans, applications for both the entity and individuals, along with supporting documentation, as well as applications for waivers or modifications of the FSRA's Rules.

The portal will allow responses to the FSRA's queries, and payment of fees by a variety of methods. FSRA Connect will allow the Applicant to track the progress of its application, and to interact with the FSRA in an efficient, sustainable manner that minimises documentation.

Similarly, licensed firms will be able to submit returns, raise and track queries and correspondence. The system will provide an efficient process should the authorised firm seek to vary its Financial Services Permission.

From the FSRA's perspective, the platform will provide efficiency, structure, and uniformity to its various processes, while not replacing the exercise of judgement and discretion. The system will allow for the tracking of key performance indicators, the allocation of resources, and the production and tailoring of management information and statistics. Importantly, FSRA Connect will maintain an audit trail of processes, applications, issues, decisions, and correspondence.

The implementation of FSRA Connect will adopt a phased, sequential approach, beginning with authorisation in Phase 1, followed by supervision as Phase 2, and finally enforcement as Phase 3. Phase 1 went live on 1 November 2021.





# LOOKING FORWARD

***The FSRA has learnt much through the regtech case studies described above.***

For example, the experience gained through developing the PoC for client money monitoring will stand us in good stead when dealing with tech providers for other engagements.

Our work on digital regulations holds great promise for making compliance simpler and easier for firms and has made it clearer how different aspects of our regulations are linked.

Moving forward, the FSRA will work to operationalise these case studies where possible. This means that we will use these regtech solutions as part of our regular work.

Some solutions, such as FSRA Connect or the Market Surveillance System, are further along the path, being either operational or are about to become operational.

Other solutions are more exploratory, such as Project Voyager, and so will require more work to determine how they can be effectively operationalised.

The ADGM Digital Lab will play an increasingly significant role in our regtech efforts. By making regtech solutions available on the ADGM Digital Lab, we intend to help financial institutions better understand the potential savings and efficiencies that such solutions can offer.

This is because the ADGM Digital Lab will provide a safe testing environment for financial institutions without the need to commit significant time and resources.

In the coming year, we intend to focus more attention on the direct needs of supervisors and compliance officers. From our discussions, a common challenge faced by compliance officers is in obtaining sufficiently timely and detailed information from key business areas to effectively monitor compliance.

Another ongoing challenge lies in compliance officers facing challenges in distinguishing between individual firms' circumstances, which would allow the compliance officers to better guide their firms in meeting their specific regulatory requirements.

In this regard, initiatives such as the Smart Guides would be very helpful in providing targeted information that is directly relevant to firms.

We look forward to our ongoing journey in the regtech space. It will be a key enabler for the FSRA in supporting the continued growth of the ADGM by letting us better focus scarce resources on challenging topics.

*We intend to help financial institutions better understand the potential savings and efficiencies that such solutions can offer.*

