



Information Paper

APAC Funds Processing Automation and Standardisation Report

Tracking industry progress
2018 Report

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1. Background

Over the past decade, the Asia Pacific region has observed impressive growth in the funds segments. Concurrently, there has been a strong demand to improve the levels of operational efficiency, particularly through the standardisation and automation in the funds processing space.

Recognising these drivers and trends, there has also been a call for greater harmonisation of financial standards and market practices. Along with the mandatory ISO20022 migration in near future, it is important for the industry to be aware and focus on the fund processing standardisation and automation rates across APAC.

The main objective of the APAC Funds Processing Automation and Standardisation report is to provide periodic information on key funds markets in the region of the industry's progress towards increased levels of automation of fund orders and the use of ISO standards. Users of this report include market players involved in funds processing transaction flow, asset managers, regulators & policy makers and other interested stakeholders.

This report covers data for the second half of 2018, collected from transfer agents based in key APAC fund processing centres - Hong Kong, Taiwan and Singapore. The report combines the data across these markets into a single fund processing report providing the following views:

- An aggregated view on these 3 fund processing centres together;
- A detailed overview per fund processing centre (Hong Kong, Singapore and Taiwan separately);
- A regional perspective of fund processing STP rates per fund processing centre; and
- The scope of funds coverage are both domestic & cross border.

This publication of the APAC Fund Processing Automation and Standardisation report was developed with the support of the Asia Funds Automation Consortium (AFAC), the Hong Kong Investment Funds Association (HKIFA),

the Association of the Luxembourg Fund Industry (ALFI) and their members. SWIFT and its supporting partners plan to publish two reports per year, which will be available on SWIFT and respective partners' official websites.

For the European region, SWIFT collaborates on a similar effort with the European Fund and Asset Management Association (EFAMA) to publish reports on trends since 2009, in standardisation and automation rates of fund orders received by transfer agents (TAs) in Luxembourg and Ireland. The published bi-yearly reports showing the evolution of standardisation and automation of fund orders are available on both EFAMA and SWIFT's official websites.

Key elements to full automation for APAC Funds industry fragmentation in the Asia Pacific region, along with the diversity of regulations, cultures and maturity of each market, poses complexity and a number of challenges to the industry in terms of automation and efficiency. Over the course of 1.5 years, SWIFT, AFAC, ALFI and HKIFA have worked collaboratively on analysing the rates of automation and standardisation in fund orders across the markets of Hong Kong, Singapore & Taiwan. The measured rates are expressed as such:

- **Total Automation Rate:** ISO Automation Rate + Proprietary FTP Rate
- **ISO Automation Rate:** where orders are automated following the international standards
- **Proprietary FTP Rate:** where orders are automated through proprietary means, which do not follow international standards (an example will be automation through excel)
- **Manual Rate:** where orders are handled manually

As depicted in the report, an upward trend in the total automation rate was reflected over a time horizon. However, there are certain fundamental elements that we believe are essential for continued growth and development of the funds industry in the Asian Region.

These include:

- Interoperability of infrastructure and access to markets;
- Standardisation and alignment with international standards both for domestic and cross-border flows;
- Leveraging and support of regionalisation initiatives;
- Keeping up with technology & digitisation;
- Leadership and clear guidance on next steps through collaboration.

Collaboration by market regulators and industry players alike, with clear focus and guidance on the above elements will allow the fund industry in APAC to reach further potential of automated processing.

AFAC, notes: "It's good to see gradual process to full automation – in today's digital world this must be a top priority to be relevant"

ALFI, notes: "Although a general increase in automation is positively shaping up, more effort should be put in ISO automation which provides the most useful standardisation especially in a world of cross-border distribution."

HKIFA, notes: "The report provides fund managers insights into the state of automation and standardisation of cross-border funds within key markets in the Asia-Pacific. The rate of adoption is at a reasonable level, though we hope that the industry can attach more importance to this so as to further accelerate the rate of automation. With enhanced operational efficiency, we can bring more cost-savings which will ultimately be in the interest of investors."

¹According to PwC's Asset and Wealth Management Market Research Centre.

2. Report Highlights

I. Automation and standardisation of fund orders in Hong Kong, Taiwan and Singapore

- **Survey coverage: 25 transfer agents¹ (TAs)** contributed to the survey
 - a. **11 Hong Kong-based TAs**
 - b. **9 Taiwan-based TAs**
 - c. **5 Singapore-based TAs**
- **Total automation rate²** of orders reached **75.5% in Q4 2018** compared to 69.4% in Q4 2017.
- **ISO automation rate³** reached **33.2%** in Q4 2018 compared to 31.9% in Q4 2017.
- **Proprietary FTP rate** reached **42.3%** in Q4 2018 compared to 37.6% in Q4 2017.
- The **order volumes** processed by the 25 survey contributors reached **6.6 million orders** in 2018.
- The **25-surveyed TAs manually processed 1.96 million orders in 2018**. Manual process rates reached 24.5% in Q4 2018 compared to 30.6% in Q4 2017.

II. Automation and standardisation of fund orders in Hong Kong

- **2018 survey coverage: 11 TAs contributed.**
- The **total automation rate of orders** processed by Hong Kong TAs reached **63.8%** during Q4 2018, compared to 61.7% in Q4 2017.

- The **ISO automation rate** reached 27.3% % in Q4 2018 compared to 22.2% in Q4 2017. The rate of **proprietary FTP** reached **36.5%** in Q4 2018, compared to 39.5% in Q4 2017, while **manual orders** decreased to **36.2%** in Q4 2018, compared to 38.3% in Q4 2017.
- The **order volumes** processed by Hong Kong TAs reached **2.8 million** during 2018.

III. Automation and standardisation of fund orders in Taiwan

- **2018 survey coverage: 9 TAs contributed.**
- The **total automation rate** of orders processed by Taiwan TAs reached **84.1%** in Q4 2018, compared to 81.7% in Q4 2017.
- The percentage of automated orders based on **ISO messaging standards** reached **42.6%** during Q4 2018, compared to 44.2% in Q4 2017. The rate of **proprietary FTP** orders reached **41.5%** in Q4 2018, compared to 37.5% in Q4 2017. The **manual orders** decreased to **15.9%** in Q4 2018, compared to 18.3% in Q4 2017.
- The **order volumes** processed by Taiwan TAs reached **2.9 million** in 2018.

IV. Automation and standardisation of fund orders in Singapore

- **2018 survey coverage: 5 TAs contributed.**
- The **total automation rate⁴** of orders processed by Singapore TAs increased to **83.8%** in Q4 2018, compared to 56.2% in Q4 2017.
- The percentage of automated orders based on **ISO messaging standards** reached 22.1% in Q4 2018, compared to **30.8%** during Q4 2017. The rate of **proprietary FTP** orders increased to **61.7%** in Q4 2018, compared to 25.4% in Q4 2017. The **manual orders** decreased to **16.2%** in Q4 2018 compared to 43.8% in Q4 2017.
- The **order volumes** processed by Singapore TAs reached **0.9 million** in 2018.

¹ We have integrated the data from the first semester 2018 in the end year report 2018 from one transfer agent that could not participate on time for the mid-year 2018 report. Therefore, some percentage might be slightly different for Hong Kong and Taiwan for the second half of 2018 compared to the mid-year report of 2018 (as figures were not provided at the time).

² The 'total automation rate' is the sum of the 'ISO automation rate' + the 'proprietary formatted ftp' rate. This is based on combined figures of the surveyed markets.

³ The 'ISO automation rate' corresponds to the standardisation rate, i.e. the rate of automated orders using an ISO format (ISO 20022 or ISO 150222 'fund template').

⁴ The massive increase in total automation rate and decrease in the manual rate are mainly due to one transfer agent that contributed for 86% of the total orders

3. Automation and Standardisation of Fund Orders in Hong Kong, Taiwan and Singapore

3.1 Total order volume evolution

During 2018, the 25 survey contributors have processed 6.6 million orders across Hong Kong, Taiwan and Singapore⁵. This represents an average volume of 0.55 million orders per month.

(in millions)	2018
Total number of orders	6.6
Monthly average	0.55

Table 1 – Total order volume 2018

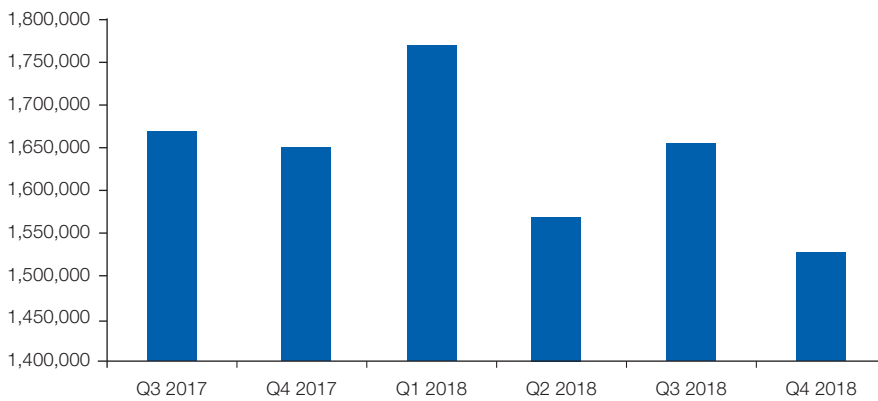


Figure 1 – Total order volume evolution 2017 - 2018

⁵ Survey data collected are based on voluntary contributions by participating entities. Estimated market coverage is currently not available in this edition of the report publication.

3. Automation and Standardisation of Fund Orders in Hong Kong, Taiwan and Singapore

3.2 Total automation and standardisation rates

Total automation rate

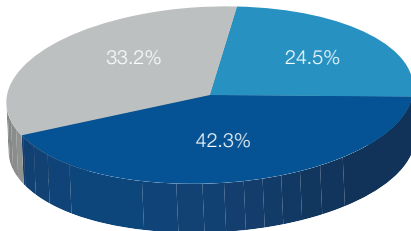
The total automation rate reached 75.5% in Q4 2018 compared to 69.4% in Q4 2017.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Total automation rate	67.3%	69.4%	65.4%	67.8%	73.9%	75.5%

Table 2 – Total automation rate evolution Q3 2017 – 2018 (by quarter)

Total standardisation rate

The use of the ISO messaging standard reached 33.2% in Q4 2018, compared to 31.9% in Q4 2017. The proprietary FTP reached 42.3% in Q4 2018, compared to 37.6% in Q4 2017 and the share of manual orders decreased from 30.6% in Q4 2017 to 24.5% in Q4 2018.



Manual Prop FTP ISO Automation

Figure 2 – Total fund order processing rates Q4 2018

The adoption of proprietary FTPs reached 42.3% in Q4 2018 compared to 37.6% in Q4 2017, while the share of manual orders decreased from 30.6% in Q4 2017 to 24.5% in Q4 2018.

The table below provides detailed rates per quarter.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
ISO automation rate	32.1%	31.9%	29.6%	32.3%	31.5%	33.2%
Proprietary FTP rate	35.3%	37.6%	35.8%	35.5%	42.5%	42.3%
Manual rate	32.7%	30.6%	34.6%	32.2%	26.1%	24.5%

Table 3 – Total fund order processing rates evolution Q3 2017 - 2018 (by quarter)

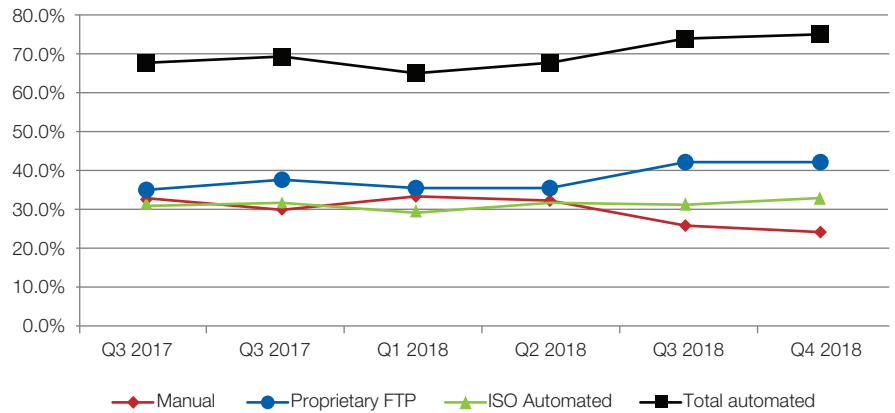


Figure 3 – Total fund order processing volume evolution Q3 2017 - 2018

4. Automation and Standardisation of Fund Orders in Hong Kong

4.1 Hong Kong Order Volume Evolution

In 2018, the 11 Hong Kong survey contributors processed 2.8 million orders. This represented a monthly average of 0.24 million orders.

(in millions)	2018
Total number of orders	2.8
Monthly average	0.24

Table 4 – Hong Kong order volume 2018

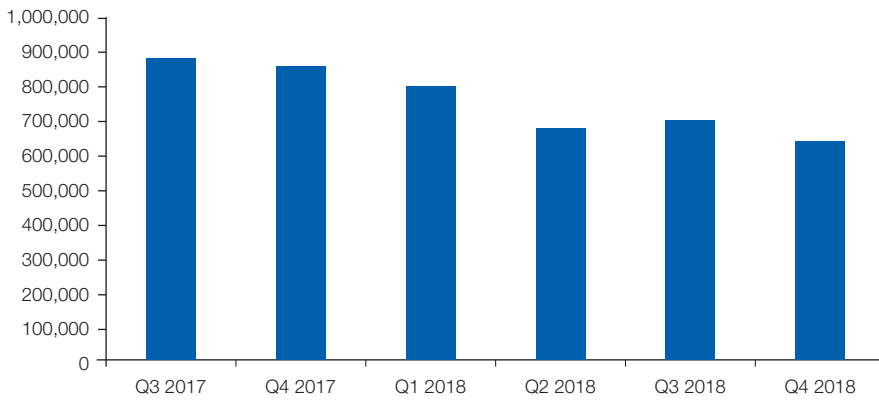


Figure 4 – Hong Kong order volume evolution Q3 2017 - 2018

4. Automation and Standardisation of Fund Orders in Hong Kong

4.2 Hong Kong Automation and Standardisation Rates

Hong Kong automation rate

The total automation rate increased to 63.8% in Q4 2018 compared to 61.6% in Q4 2017.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Total automation rate	58.3%	61.7%	60.7%	62.3%	61.6%	63.8%

Table 5 – Hong Kong total automation rate evolution Q3 2017 - 2018 (by quarter)

Hong Kong standardisation rate

The use of ISO increased to 27.3% in Q4 2018 compared to 22.2% in Q4 2017, and the adoption of proprietary formats reached 36.5% in Q4 2018 versus 39.5% in Q4 2017. The share of manual orders decreased to 36.2% in Q4 2018, compared to 38.3% in Q4 2017.

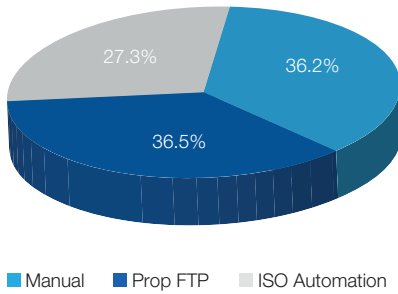


Figure 5 – Hong Kong fund order processing rates Q4 2018

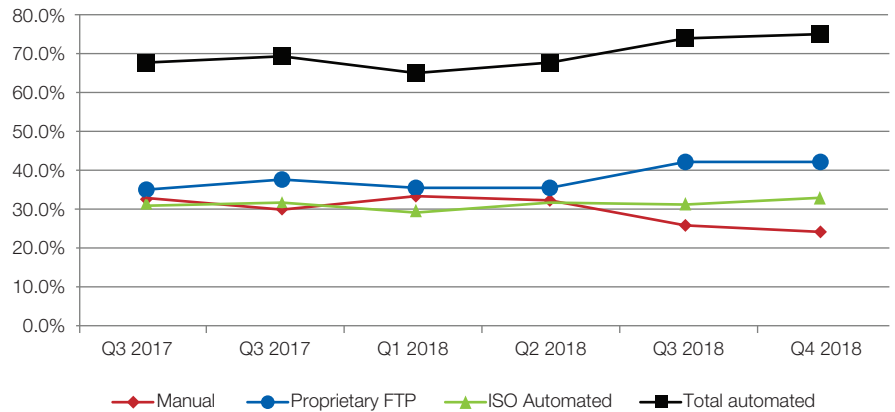


Figure 6 – Hong Kong total fund order processing volume evolution Q3 2017 - 2018

The table below provides detailed rates per quarter.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
ISO automation rate	21.7%	22.2%	21.9%	25.5%	26.1%	27.3%
Proprietary FTP rate	36.6%	39.5%	38.7%	36.8%	35.5%	36.5%
Manual rate	41.7%	38.3%	39.4%	37.7%	38.4%	36.2%

Table 6 – Hong Kong total fund order processing rates evolution Q3 2017 - 2018 (by quarter)

5. Automation and Standardisation of Fund Orders in Taiwan

5.1 Taiwan order volume evolution

In 2018, the 9 Taiwan survey contributors processed 2.9 million orders. This represented a monthly average of 0.24 million orders.

(in millions)	2018
Total number of orders	2.9
Monthly average	0.24

Table 7 – Taiwan order volume 2018

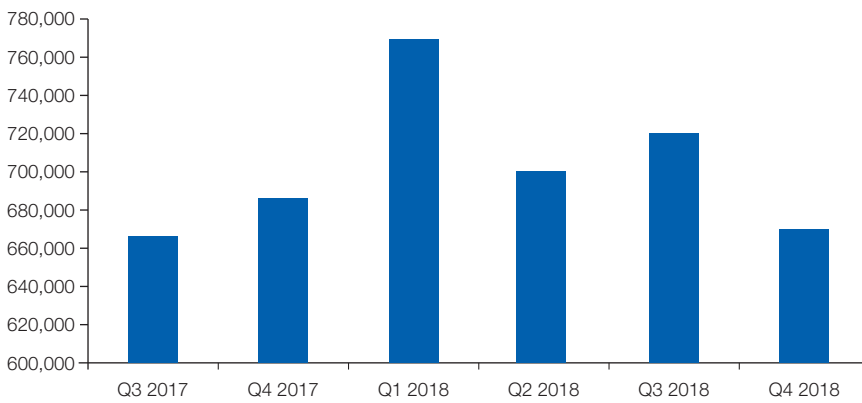


Figure 7 – Taiwan order volume evolution Q3 2017 - 2018

5. Automation and Standardisation of Fund Orders in Taiwan

5.2 Taiwan automation and standardisation rates

Taiwan automation rate

The total automation rate increased to 84.1% in Q4 2018 compared to 81.7% in Q4 2017⁶.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Total automation rate	80.5%	81.7%	80.3%	82.6%	82.5%	84.1%

Table 8 – Taiwan total automation rate evolution Q3 2017 - 2018 (by quarter)

Taiwan standardisation rate

The use of ISO reached 42.6% in Q4 2018 compared to 44.2% in Q4 2017, and the adoption of proprietary formats increased to 41.5% in Q4 2018 compared to 37.5% in Q4 2017. The share of manual orders decreased to 15.9% in Q4 2018 compared to 18.3% in Q4 2017.

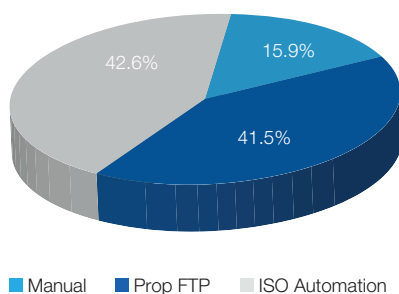


Figure 8 – Taiwan fund order processing rates Q4 2018

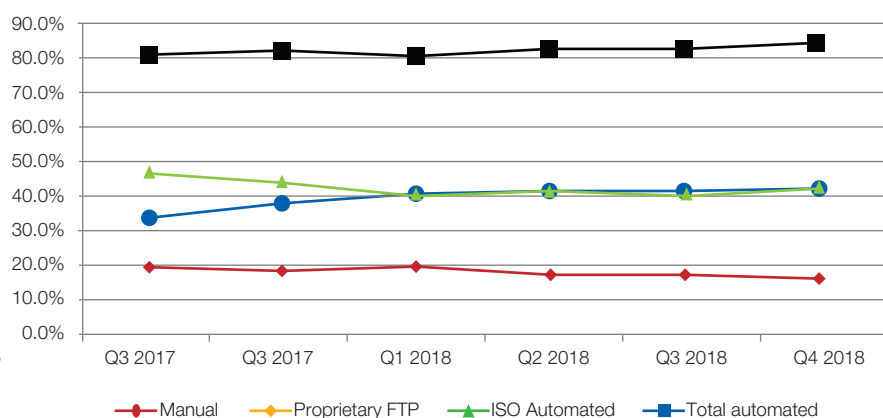


Figure 9 – Taiwan total fund order processing volume evolution Q3 2017 - 2018

The table below provides detailed rates per quarter:

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
ISO automation rate	47.3%	44.2%	40.6%	41.7%	41%	42.6%
Proprietary FTP rate	33.2%	37.5%	39.7%	40.9%	41.5%	41.5%
Manual rate	19.5%	18.3%	19.7%	17.4%	17.5%	15.9%

Table 9 – Taiwan total fund order processing rates evolution Q3 2017 - 2018 (by quarter)

⁶ The percentage of total automation rate recorded for Taiwan is likely due to the automated funds order service offered by the Taiwan Depository & Clearing Corporation (TDCC).

6. Automation and Standardisation of Fund Orders in Singapore

6.1 Singapore order volume evolution

In 2018, the 5 Singapore survey contributors processed 0.94 million orders. This represented a monthly average of 0.078 million orders.

(in millions)	2018
Total number of orders	0.94
Monthly average	0.078

Table 10 – Singapore order volume 2018

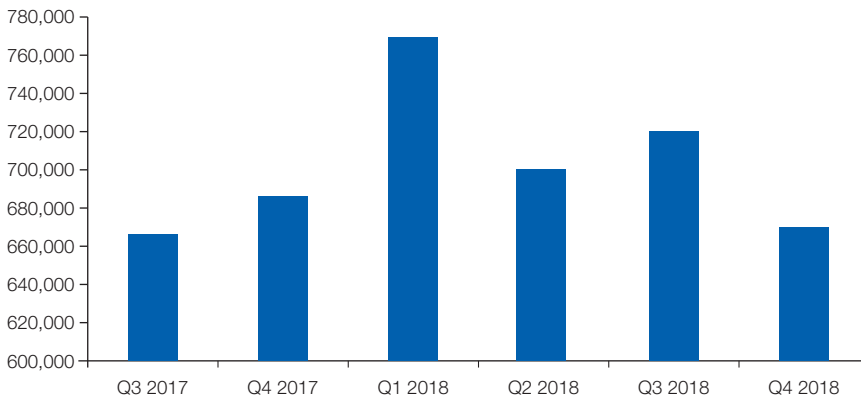


Figure 10 – Singapore order volume evolution Q3 2017 - 2018

6. Automation and Standardisation of Fund Orders in Singapore

5.2 Singapore automation and standardisation rates

Singapore automation rate

The total automation rate increased to 83.8% in Q4 2018, compared to 56.2% in Q4 2017.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Total automation rate	62.4%	56.2%	33.9%	35.7%	83%	83.8%

Table 11 – Singapore total automation rate evolution 2017 - 2018 (by quarter)

Singapore standardisation rate

The use of ISO reached 22.1% in Q4 2018, compared to 30.8% in Q4 2017, while the adoption of proprietary formats increased to 61.7% in Q4 2018, compared to 25.4% in Q4 2017. The share of manual orders decreased to 16.2% in Q4 2018, compared to 43.8% in Q4 2017.

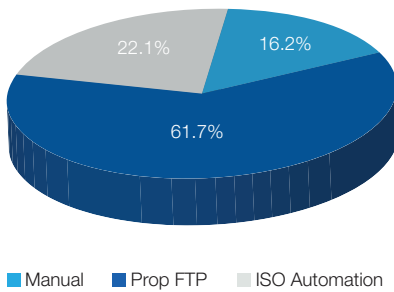


Figure 11 – Singapore fund order processing rates Q4 2018

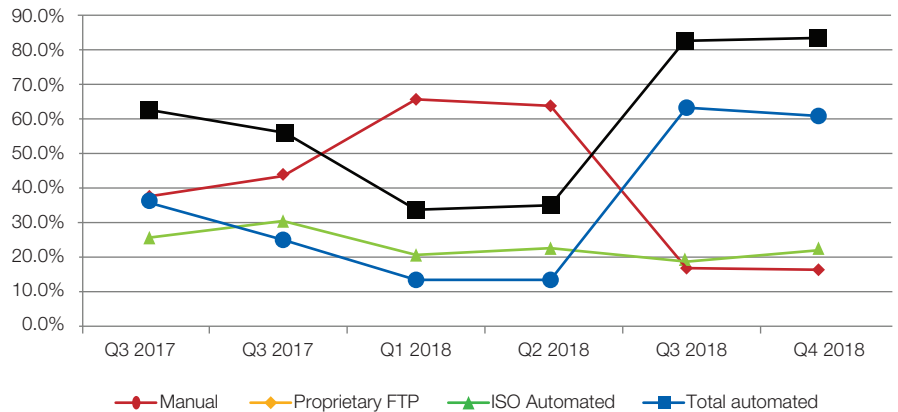


Figure 12 – Singapore total fund order processing volume evolution Q3 2017 - 2018

The table below provides detailed rates per quarter.

	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
ISO automation rate	25.9%	30.8%	20.4%	22.4%	19.5%	22.1%
Proprietary FTP rate	36.5%	25.4%	13.5%	13.3%	63.5%	61.7%
Manual rate	37.6%	43.8%	66.1%	64.3%	17%	16.2%

Table 12 – Singapore total fund order processing rates evolution Q3 2017 - 2018 (by quarter)

7. Next report

The next joint SWIFT APFAS Report is planned for publication in Q4 2019 and will cover the July 2017 – June 2019 progress in standardisation rates across the three funds processing centres, Hong Kong, Taiwan and Singapore.

8. Acronyms

AFAC	: Asia Funds Automation Consortium
ALFI	: Association of the Luxembourg Fund Industry
APAC	: Asia Pacific
APFAS	: APAC Funds Processing Automation and Standardisation
EFAMA	: European Fund & Asset Management Association
FTP	: File Transfer Protocol
HKIFA	: Hong Kong Investment Funds Association
ISO	: International Organisation for Standards
STP	: Straight Through Processing
SWIFT	: Society of Worldwide Interbank Financial Telecommunications
TA	: Transfer Agent



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Contacts

For more information about this paper, contact

Lisa O'Connor,
Managing Director, Capital Markets and
Standards, APAC
Lisa.OCONNOR@swift.com