

Fund Processing Standardisation
Annual Report
on
automation and standardisation of
cross-border funds orders in 2017

3rd July 2018

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Background

Since May 2009, EFAMA & SWIFT publish on a regular basis reports on trends in standardisation and automation rates of fund orders received by transfer agents (TAs) in Luxembourg and Ireland.

This latest version of the Fund Processing Standardization publication is the full-year 2017 report. It combines the Luxembourg and Ireland data into one single cross-border fund processing report providing

- a. an aggregated view on both fund processing centres together;
- b. a detailed overview per fund processing centre (Luxembourg and Ireland separately); and
- c. a regional perspective of fund processing STP rates per fund processing centre.

This ongoing initiative has the goal to inform about industry's advancements toward increased automation of fund orders and the use of ISO standards, as recommended by EFAMA¹. The audience are institutions involved in fund processing, as well as the European Commission, the European Parliament and other interested stakeholders.

Besides the reporting of order volumes and automation rates, this report contains an analysis on the regional split of order volumes (by order giver location). The regional figures are provided in each market focus section as they are based on the underlying sub-set of survey respondents in these markets. In addition, the report provides statistics on the automated links newly implemented by the TAs in Luxembourg and Ireland in 2017.

EFAMA and SWIFT publish two Fund Processing Standardisation reports per year, which are available on both company websites.

¹ EFAMA's best practice recommendations are available on both SWIFT and EFAMA's websites. The first set of recommendations were published in February 2005. A new report was published on 24 March 2011, consolidating the recommendations published in 2005 and updated in 2008, and extending the recommendations in two key areas, i.e. Transfers and Corporate Actions.

Report Highlights

A. Automation and standardisation of fund orders in Luxembourg and Ireland

1. **Survey coverage: 29 transfer agents (TAs)** contribute to the survey
 - a. **20 Luxembourg-based TAs**
 - b. **9 Ireland-based TAs**

With an estimated market coverage of 80% of the cross-border market volumes in Ireland and an estimated market coverage of 75% in Luxembourg.
2. **Total automation rate²** of orders during Q4 2017 reached **88%**; this represents an increase of 1.3 percentage points compared to Q4 2016 (**86.7%**).
3. **ISO automation rate³** reached **55.5%** in Q4 2017 compared to **53.4%** in Q4 2016, an increase of 2.1 percentage point.
4. In terms of number of new automated links setup by TAs with new order givers, **ISO adoption is the first choice**. Indeed, survey contributors have reported 243 new ISO automated links implemented during 2017, compared to 4 new proprietary file transfer (FTP) links put in place in 2017.
5. The **ISO messaging standard adoption** rate, in line with the EFAMA recommendation in favour of a single ISO standard to be used in the funds industry, continues to strengthen to the detriment mainly of manual orders.
6. The **order volumes** processed by the 29 survey contributors reached **38.8 million orders** in 2017.
7. The **29 surveyed TAs manually processed 4.9 million orders in 2017**, compared to 4.8 million in 2016. Manual process rates decreased by 1.3 percentage points to 12% in Q4 2017 (against 13.3% in Q4 2016).

Fund orders automation and standardisation progress overview

GLOBAL OVERVIEW	Q4 2015	Q4 2016	Q4 2017	Change 16 - 17
Manual orders	14.6%	13.3%	12.0%	-1.3%
ISO automated orders	51.2%	53.4%	55.5%	2.1%
Proprietary FTP orders	34.2%	33.3%	32.5%	-0.8%
Total automated	85.4%	86.7%	88.0%	1.3%

Table 1 – Automation and standardisation rate evolution (Q4 data)

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

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').

B. Automation and standardisation of fund orders in Luxembourg

1. **Survey coverage: 20 TAs contributed to the survey in 2017** (8 in-house and 12 third-party TAs).
2. The **total automation rate of orders** processed by Luxembourg TAs reached **85.4%** during Q4 2017, compared to 84.4% in Q4 2016.
3. The **ISO automation rate** reached 69.8% in Q4 2017 compared to 68.3% in Q4 2016, an increase of 1.5 percentage points. The rate of proprietary FTP decreased to 15.6% in Q4 2017 against 16.1% in Q4 2016, and the manual orders decreased to 14.6% in Q4 2017 compared to 15.6% in Q4 2016.
4. The **order volumes** processed by Luxembourg TAs reached **23.9 million** in 2017 compared to 21.3 million in 2016. The number of orders processed manually reached 3.6 million in 2017 compared to 3.5 million in 2016.
5. The **ISO automation rate** increased in Americas region with 46.6% in Q4 2017 compared to 43.1% in Q4 2016. While In EMEA and APAC regions, the ISO automation rate decreased respectively to 67% and 45.6% in Q4 2017 (against 69% and 46% in Q4 2016).

Fund orders automation and standardisation progress overview- Luxembourg

GLOBAL OVERVIEW	Q4 2015	Q4 2016	Q4 2017	Change 16 - 17
Manual orders	17.1%	15.6%	14.6%	-1%
ISO automated orders	65.0%	68.3%	69.8%	1.5%
Proprietary FTP orders	17.9%	16.1%	15.6%	-0.5%
Total automated	82.9%	84.4%	85.4%	1%

Table 2 – Luxembourg automation and standardisation rate evolution (Q4 data)

C. Automation and standardisation of fund orders in Ireland

1. **Survey coverage: 9 TAs surveyed** (9 third-parties TAs).
2. The **total automation rate** of orders processed by Irish TAs reached **92.1%** in Q4 2017 compared to 90.6% in Q4 2016, an increase of 1.5 percentage points.
3. The percentage of automated orders based on **ISO messaging standards** increased to **32.5%**, in Q4 2017, from 27.8% in Q4 2016. The **rate of proprietary FTP orders** decreased to **59.6%** in Q4 2017 (against 62.8% in Q4 2016). The manual orders decreased from 9.4% in Q4 2016 to 7.9% in Q4 2017.
4. The **order volumes** processed by Irish TAs reached **14.9 million** in 2017 compared to 12.5 million in 2016.
5. The **ISO automation rate increased** in the 3 regions. In APAC region from 18.1% in Q4 2016 to 26.6% in Q4 2017. In EMEA and Americas regions, the ISO automation rate increased respectively to 12.4% and 18.2% in Q4 2017 (against 9.5% and 9.6% in Q4 2016).

Fund orders automation and standardisation progress overview – Ireland

GLOBAL OVERVIEW	Q4 2015	Q4 2016	Q4 2017	Change 16 - 17
Manual orders	10.3%	9.4%	7.9%	-1.5%
ISO automated orders	26.9%	27.8%	32.5%	4.7%
Proprietary FTP orders	62.8%	62.8%	59.6%	-3.2%
Total automated	89.7%	90.6%	92.1%	1.5%

Table 3 – Ireland automation and standardisation rate evolution (Q4 data)

A. Automation and standardisation of fund orders in Ireland and Luxembourg

A.1. Total order volume evolution

In 2017, 38.8 million orders have been processed by the 29 survey contributors across Ireland and Luxembourg. This represents an average volume of 3.23 million orders per month, an increase by 14.2% compared to 2016.

(in millions)	2015	2016	2017
Total number of orders	34.1	34	38.8
Monthly average	2.84	2.82	3.23

Table 4 – Total order volume evolution 2015 – 2017

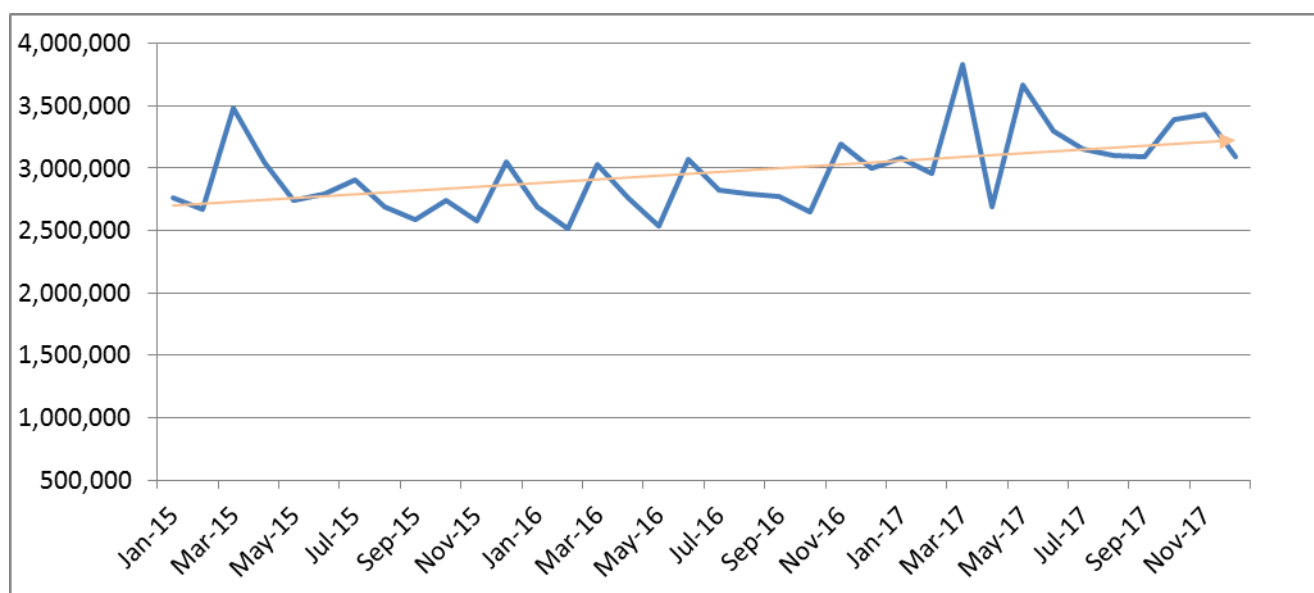


Figure 1 – Total order volume evolution 2015-2017

A.2. Total automation and standardisation rates

Total automation rate

The total automation rate reached 88% in Q4 2017, compared to 86.7% in Q4 2016. This increase was accompanied with a decrease in the manual processing rate (from 13.3% in Q4 2016 to 12% in Q4 2017), mainly to the benefit of ISO automation.

Total automation rate	Q1	Q2	Q3	Q4
2015	82.7%	83.5%	84.4%	85.4%
2016	85.7%	84.4%	86.1%	86.7%
2017	87.2%	86.6%	87.3%	88.0%

Table 5 – Total automation rate evolution 2015 - 2017 (by quarter)

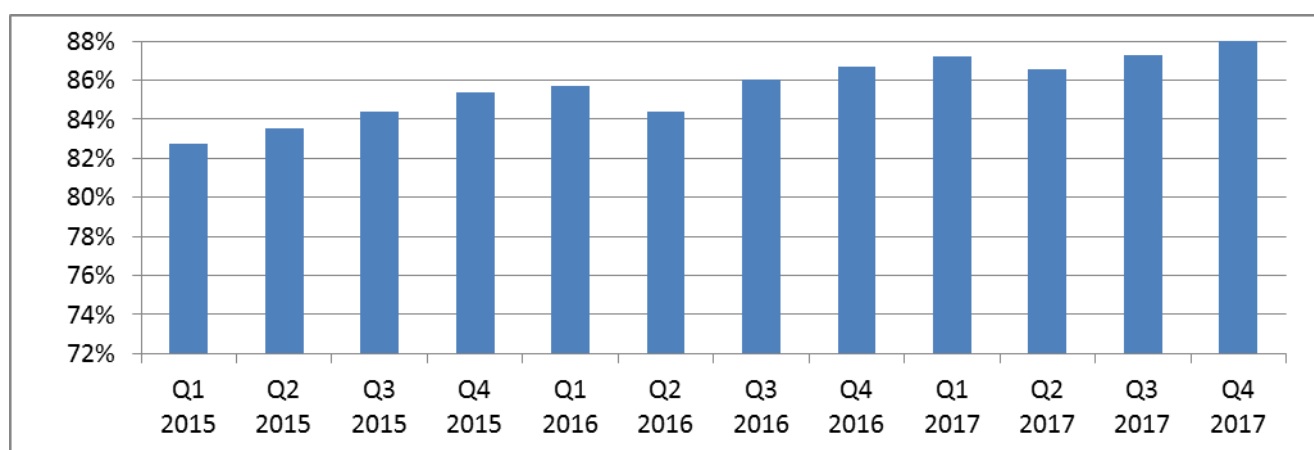


Figure 2 – Total automation level evolution (by quarter)

Total standardisation rate

The use of the ISO messaging standard increased by 2.1 percentage points in the course of 2017 to reach 55.5% in Q4 2017 (against 53.4% in Q4 2016).

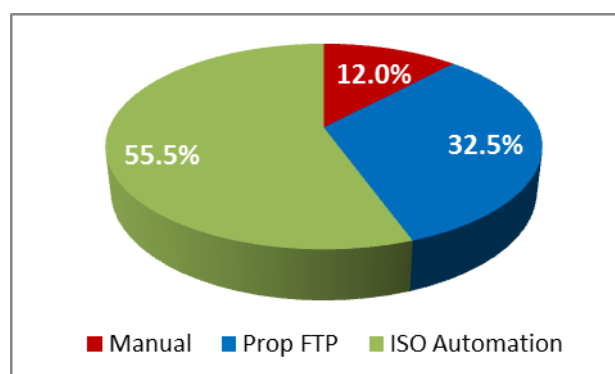


Figure 3 – Total fund order processing rates (Q4 2017)

The graph below shows the various rates evolution since the beginning of 2015.

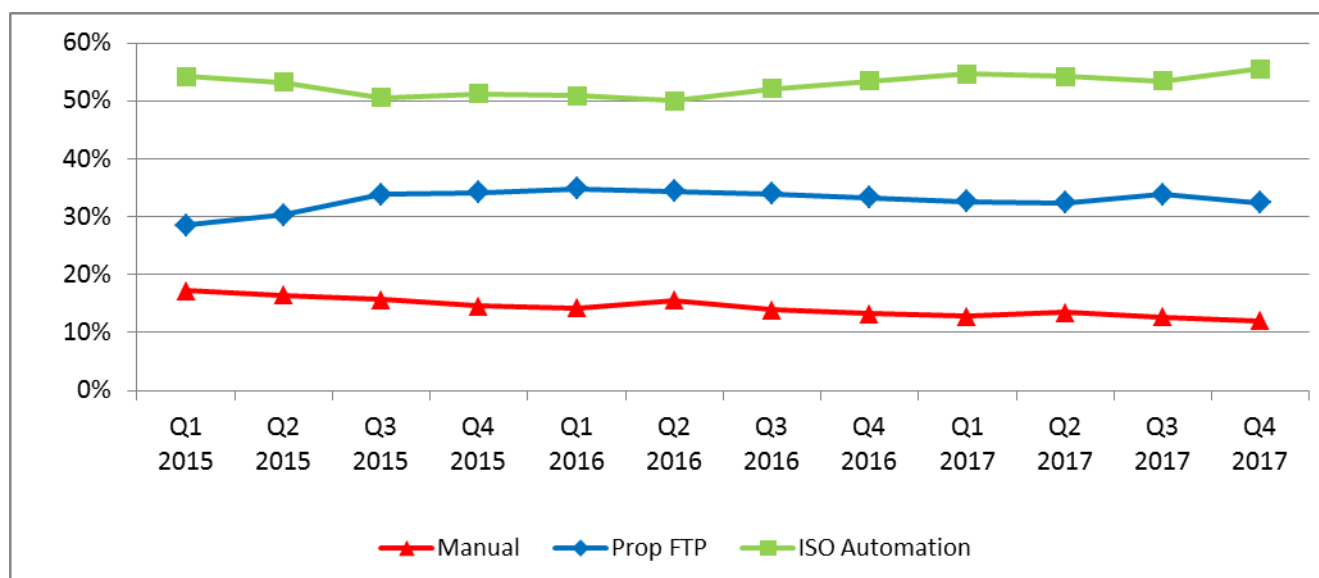


Figure 4 – Total fund order processing rates evolution 2015 - 2017

The adoption of proprietary FTPs decreased to 32.5% in Q4 2017 compared to 33.3% in Q4 2016, and the share of manual orders fell from 13.3% in Q4 2016 to 12% in Q4 2017. The above trends show a continuous increase of the ISO standards adoption, and a continuous decrease of manual.⁴

The table below provides detailed rates per quarter.

ISO automation rate	Q1	Q2	Q3	Q4
2015	54.3%	53.2%	50.5%	51.2%
2016	50.9%	50.0%	52.1%	53.4%
2017	54.6%	54.2%	53.4%	55.5%
Proprietary FTP rate	Q1	Q2	Q3	Q4
2015	28.5%	30.3%	33.8%	34.2%
2016	34.8%	34.4%	34.0%	33.3%
2017	32.6%	32.4%	33.9%	32.5%
Manual rate	Q1	Q2	Q3	Q4
2015	17.3%	16.5%	15.6%	14.6%
2016	14.3%	15.6%	13.9%	13.3%
2017	12.8%	13.4%	12.7%	12.0%

Table 6 – Total fund order processing rates evolution 2015 - 2017 (by quarter)

⁴ The reported share of “Total ISO” covers ISO 15022 and ISO 20022 messages. The migration programme from ISO 15022 fund messages into ISO 20022 fund messages is ongoing with the consequence that the ISO 20022 message will become the single ISO open market standard for fund messages, as recommended by EFAMA.

A.3. Number of new automated links set up in 2017

To better understand the automation trend, an additional survey was carried out in 2017 among 29 TAs to look at the number of **new automated links implemented** between January and December 2017 with new counterparties.

The surveyed TAs implemented new ISO links with 243 counterparties, compared to 4 new links using a proprietary FTP. Out of these new ISO links, 234 counterparties were previously using fax (representing 95% of all new links) and 5 used proprietary FTP files (2%). Brand new ISO links have been set up with the 4 (1%) remaining counterparties in 2017.

This result confirms that ISO standards remain widely favoured in the market as the most efficient automation option.

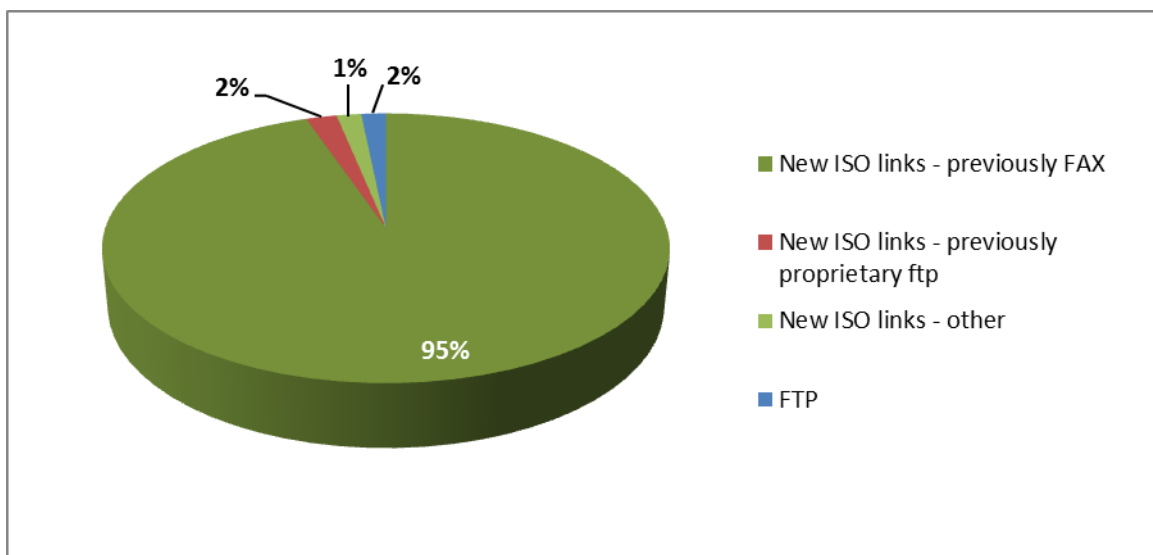


Figure 5 - New automated links launches (2017)

The new ISO adopters on the distribution side are mainly located in the EMEA region in The United Kingdom, Luxembourg, Switzerland, Italy, Sweden, France and Belgium, but some were also set up in Spain, Ireland, Malta and Austria. In APAC, new connections came primarily from Taiwan, Hong Kong, Japan and Singapore. In Americas, new connections came mainly from the United States.

B. Automation and standardisation of fund orders in Luxembourg

B.1. Luxembourg order volume evolution

In the course of 2017, the 20 Luxembourg survey contributors processed 23.9 million orders. This represented a monthly average of 1.99 million orders, an increase by 11.9% compared to 2016.

(in millions)	2015	2016	2017
Total number of orders	22.6	21.3	23.9
Monthly average	1.88	1.78	1.99

Table 7 – Luxembourg order volume evolution Luxembourg 2015 - 2017

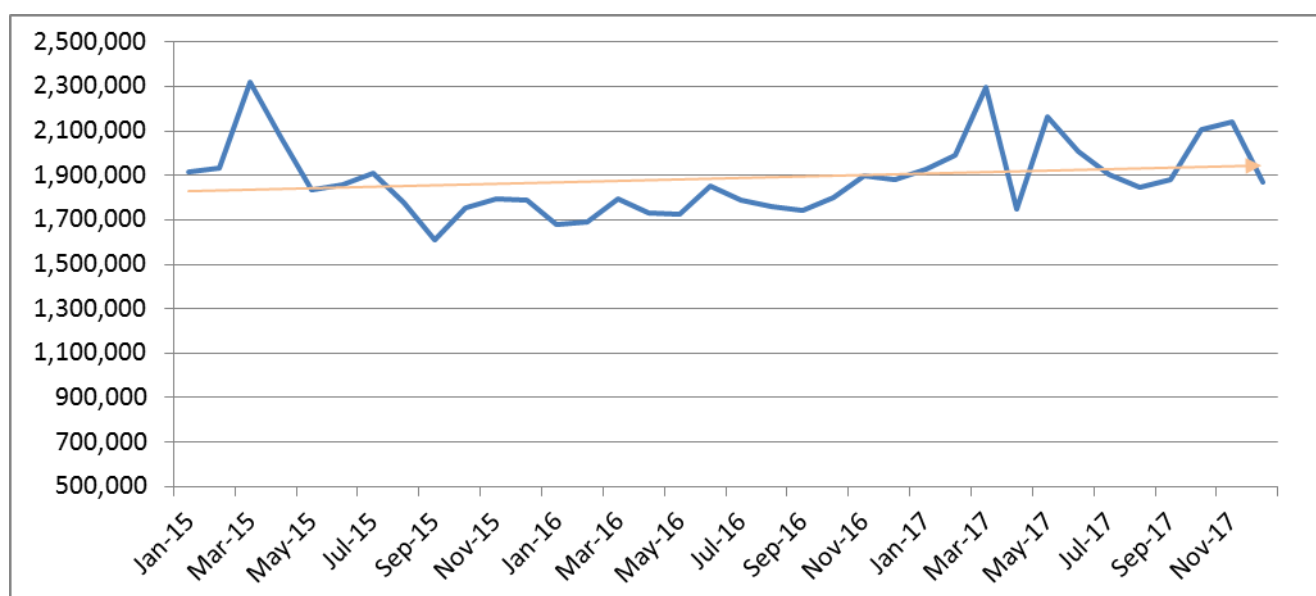


Figure 6 – Luxembourg order volume evolution 2015 - 2017

B.2. Luxembourg automation and standardisation rates

Luxembourg automation rate

The total automation rate reached 85.4% in Q4 2017, compared to 84.4% in Q4 2016.

Total automation rate	Q1	Q2	Q3	Q4
2015	81.1%	81.2%	81.6%	82.9%
2016	83.7%	81.7%	83.8%	84.4%
2017	85.4%	84.0%	84.2%	85.4%

Table 8 – Luxembourg total automation rate evolution 2015 - 2017 (by quarter)

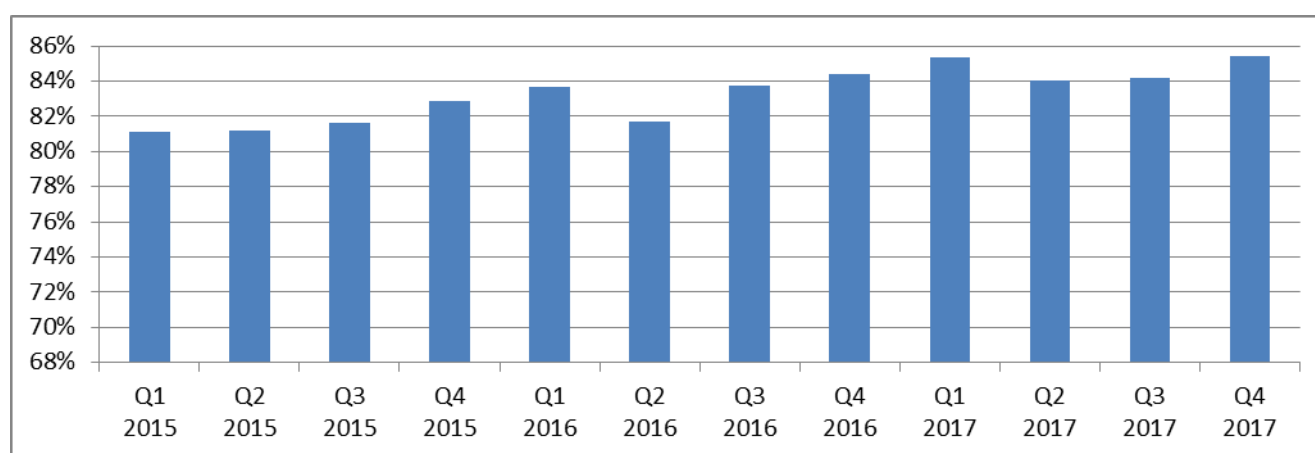


Figure 7 – Luxembourg automation level evolution 2015 - 2017 (by quarter)

Luxembourg standardisation rate

The use of ISO increased from 68.3% in Q4 2016 to 69.8% in Q4 2017, and the adoption of proprietary formats decreased by 0.5 percentage points in Q4 2017. The share of manual orders decreased from 15.6% in Q4 2016 to 14.6% in Q4 2017.

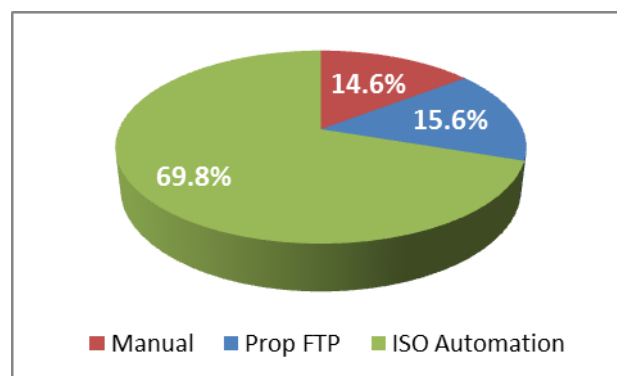


Figure 8 - Luxembourg fund order processing rates 2017 (Q4 2017)

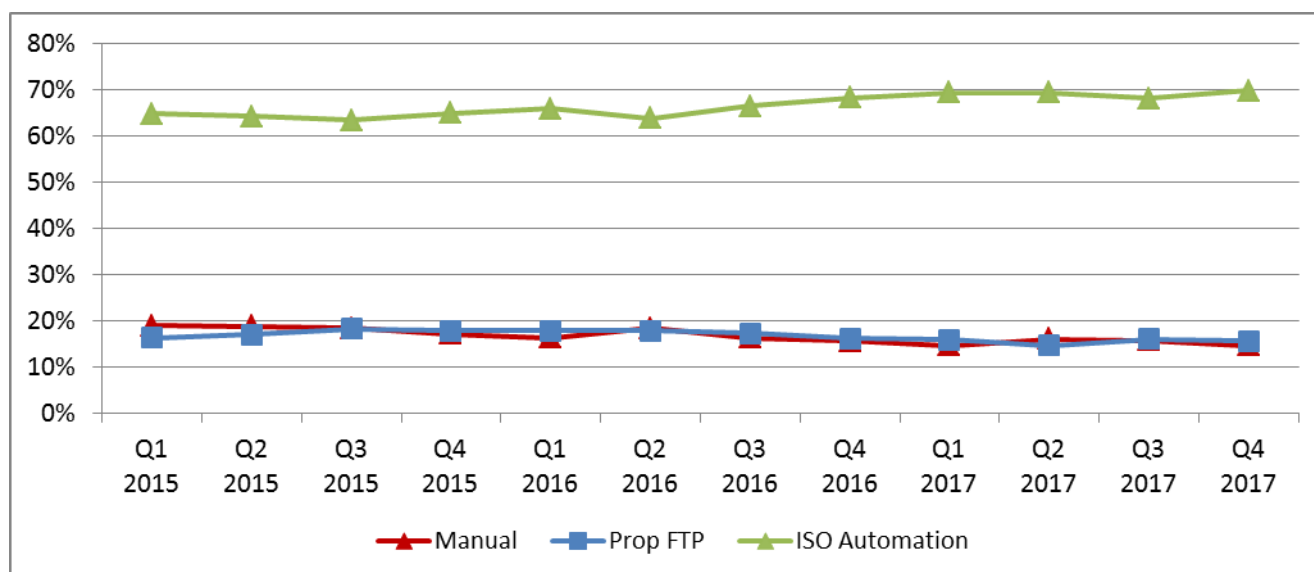


Figure 9 - Luxembourg fund order processing rates evolution 2015 - 2017

The table below provides detailed rates per quarter.

ISO automation rate	Q1	Q2	Q3	Q4
2015	64.8%	64.3%	63.4%	65.0%
2016	65.9%	63.8%	66.6%	68.3%
2017	69.4%	69.4%	68.1%	69.8%
Proprietary FTP rate	Q1	Q2	Q3	Q4
2015	16.3%	16.9%	18.2%	17.9%
2016	17.8%	17.9%	17.2%	16.1%
2017	15.9%	14.7%	16.1%	15.6%
Manual rate	Q1	Q2	Q3	Q4
2015	18.9%	18.8%	18.4%	17.1%
2016	16.3%	18.3%	16.2%	15.6%
2017	14.6%	16.0%	15.8%	14.6%

Table 9 – Luxembourg fund order processing rates evolution 2015 - 2017 (by quarter)⁵

⁵ The median for the Luxembourg total automation rate and the ISO automation rate evolved to respectively 86% and 66% compared to the previous year where it stood at 85% and 65%. The manual median rate decreased to 14% (compared to 15% last year). The median is the numeric value separating the higher half of a sample, from the lower half. The median has been calculated on 2017 volumes.

B.3. Luxembourg regional overview

Regional breakdown information is available from a subset of the Luxembourg survey contributors (14 out of 20) representing 13 million orders in 2017 or 55% of the volumes. The regional percentages are calculated on this subset.

Luxembourg regional split of volumes by order giver location

APAC-based order givers generated 26% of incoming order volumes in Luxembourg during Q4 2017. The percentage of orders from order givers in EMEA was 70% against 4% from Americas-based order senders.

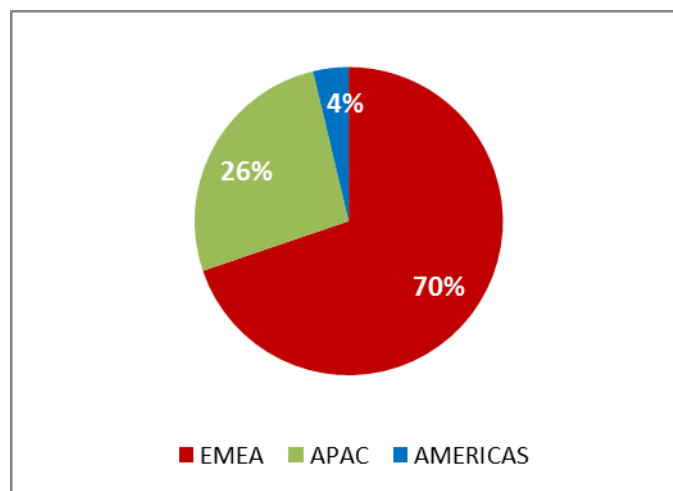


Figure 10 - Luxembourg order volumes per region (by order giver location - Q4 2017)

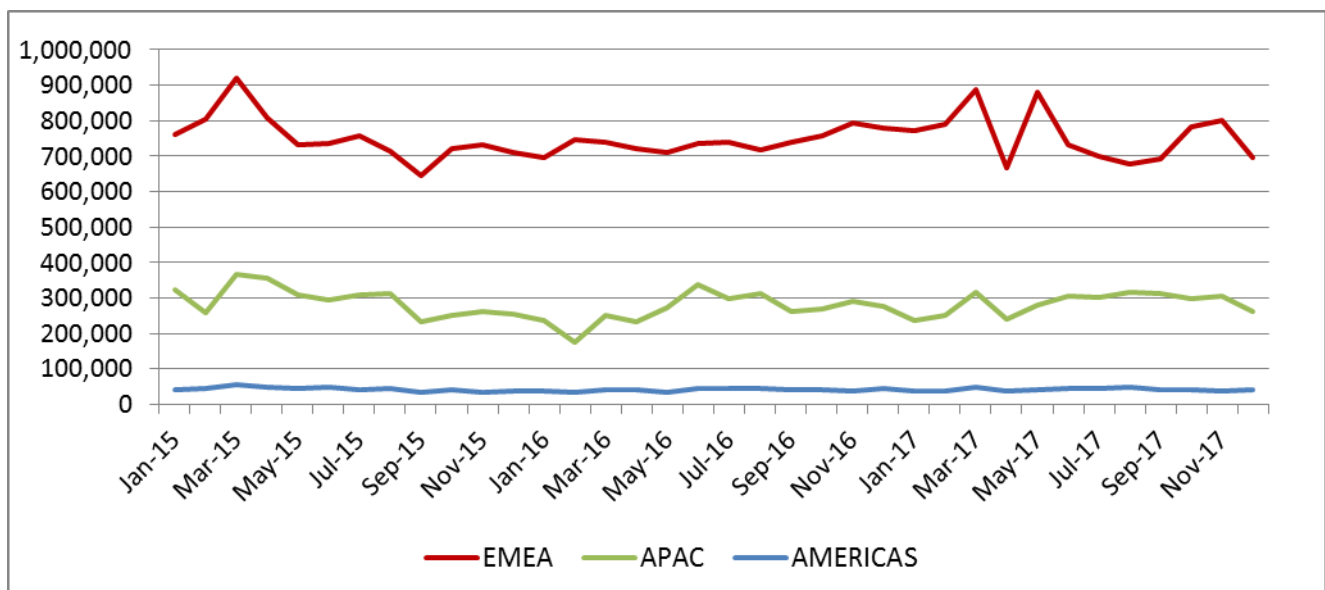


Figure 11 - Luxembourg order volumes evolution per region

Luxembourg regional split of automation and standardisation rates

ISO automation rates of Americas-based order giver increased from 43.1% in Q4 2016 to 46.6% in Q4 2017. In EMEA and APAC, the rate respectively decreased to 67% and 45.6% in Q4 2017 compared to 69% and 46% in Q4 2016.

The total automation (ISO + proprietary) rate increased in APAC and in the Americas regions. In APAC the total automation increased from 74.4% in Q4 2016 to 76.9% in Q4 2017, and in Americas it rose to 82.4% in Q4 2017.

	ISO automation			Total automation (ISO+proprietary formats)		
	EMEA	APAC	Americas	EMEA	APAC	Americas
Q4 2015	66.1%	37.1%	34.8%	85.1%	71.6%	73.9%
Q4 2016	69.0%	46.0%	43.1%	87.0%	74.4%	74.6%
Q4 2017	67.0%	45.6%	46.6%	84.4%	76.9%	82.4%

Table 10 – Luxembourg fund order automation rates evolution by region

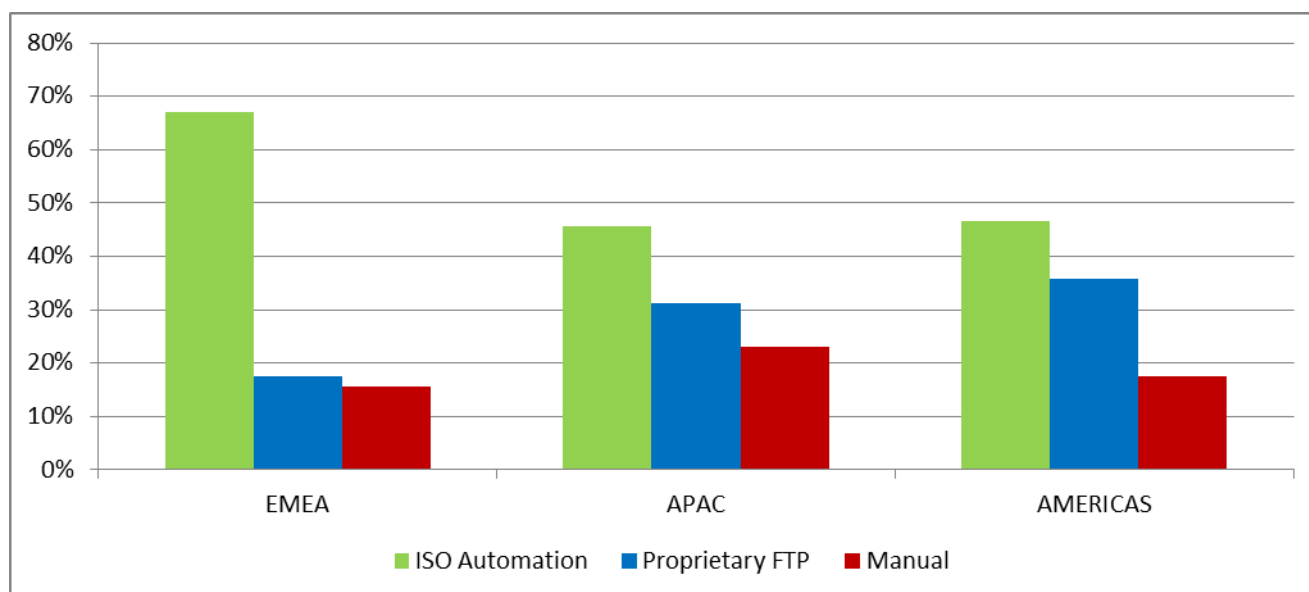


Figure 12 – Luxembourg fund order processing rates per region (Q4 2017)

C. Automation and standardisation of fund orders in Ireland

C.1. Ireland order volume evolution

In 2017, 14.9 million orders were processed by the 9 Irish survey contributors. This represented an average 1.24 million monthly volume of orders, up by 19.2% compared to 2016.

(in millions)	2015	2016	2017
Total number of orders	11.5	12.5	14.9
Monthly average	0.96	1.04	1.24

Table 11 – Ireland order volume evolution 2015 - 2017

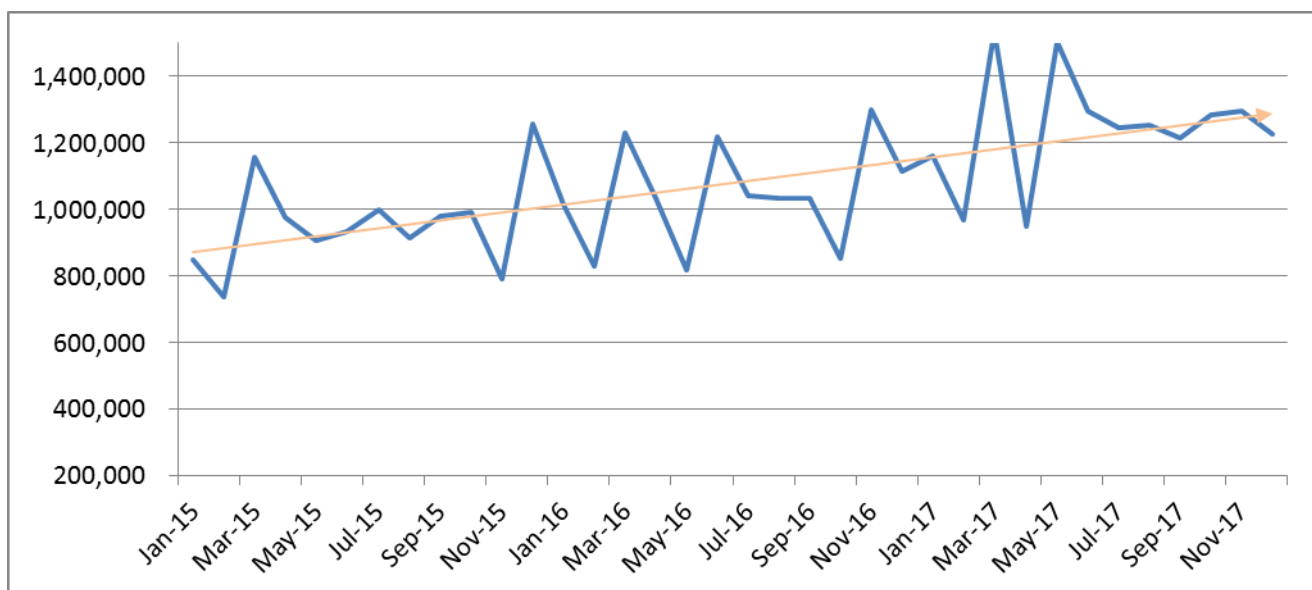


Figure 13 – Ireland order volume evolution 2015 - 2017

C.2. Ireland automation and standardisation rates

Ireland automation rate

The total automation rate reached 92.1% in Q4 2017, compared to 90.6% in Q4 2016.

Total automation rate	Q1	Q2	Q3	Q4
2015	86.4%	88.3%	89.3%	89.7%
2016	89.0%	89.1%	89.9%	90.6%
2017	90.4%	90.6%	92.0%	92.1%

Table 12 - Ireland automation rate evolution 2015 - 2017 (by quarter)

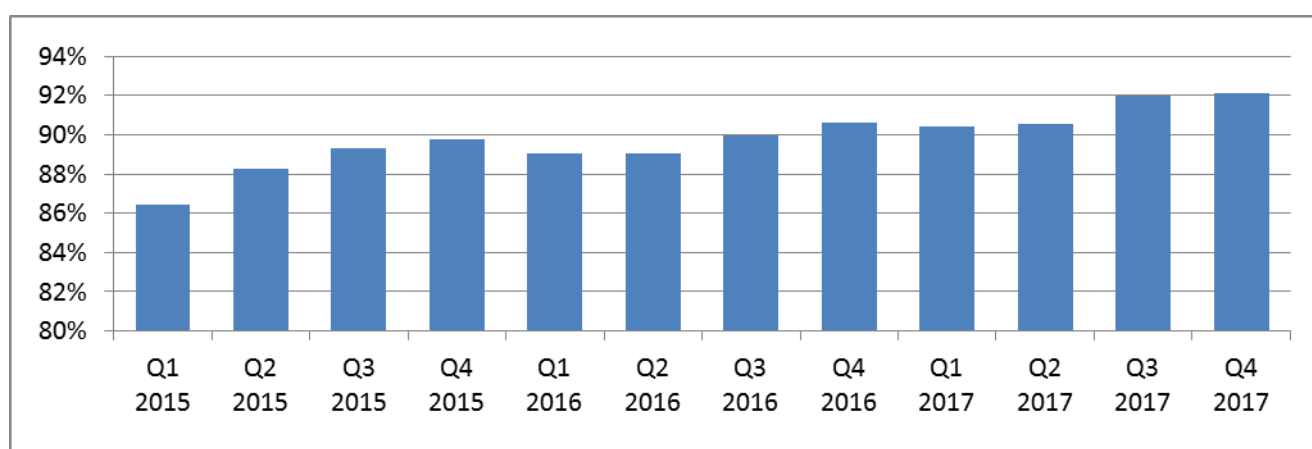


Figure 14 – Ireland automation rate evolution 2015 – 2017 (by quarter)

Ireland standardisation rate

The ISO adoption rate reached 32.5% during Q4 2017, compared to 27.8% during Q4 2016, whereas the adoption of proprietary formats decreased at 59.6% in Q4 2017 (against 62.8% in Q4 2016). The share of manual orders decreased from 9.4% in Q4 2016 to 7.9% in Q4 2017.

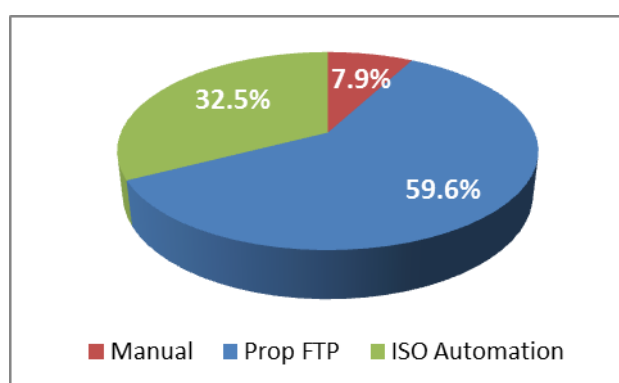


Figure 15 – Ireland fund order processing rates 2017 (Q4 2017)

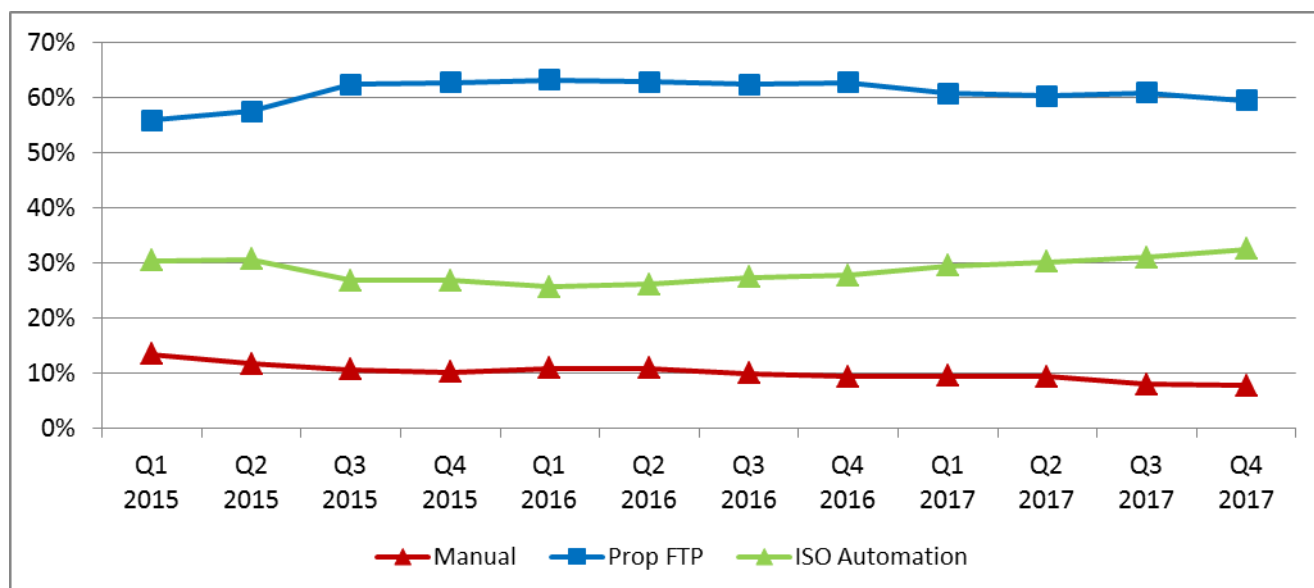


Figure 16 – Ireland standardisation rate 2015 - 2017

The table below provides detailed rates per quarter.

ISO automation rate	Q1	Q2	Q3	Q4
2015	30.5%	30.7%	26.9%	26.9%
2016	25.8%	26.1%	27.5%	27.8%
2017	29.5%	30.3%	31.1%	32.5%
Proprietary FTP rate	Q1	Q2	Q3	Q4
2015	55.9%	57.6%	62.4%	62.8%
2016	63.3%	62.9%	62.5%	62.8%
2017	60.9%	60.3%	60.9%	59.6%
Manual rate	Q1	Q2	Q3	Q4
2015	13.6%	11.7%	10.7%	10.3%
2016	11.0%	10.9%	10.1%	9.4%
2017	9.6%	9.4%	8.0%	7.9%

Table 13 – Ireland fund order processing rates evolution 2015 - 2017 (by quarter)⁶

⁶ The median for Ireland total automation rate and the ISO automation rate evolved to 83% and 66% this year compared to 80% and 61% in 2016. The manual rate median decreased to 17% compared to last year (20%).

C.3. Ireland regional overview

Regional breakdown information is available from a subset of Ireland survey contributors (5 out of 9) representing 9.5 million orders in 2017 or 64% of the volumes. The regional percentages are calculated on this subset.

Ireland regional split of volumes by order giver location

APAC-based order givers generated 3% of incoming order volumes in Ireland during Q4 2017. The percentage of orders from order givers in EMEA was 95% against 2% from Americas-based order senders.

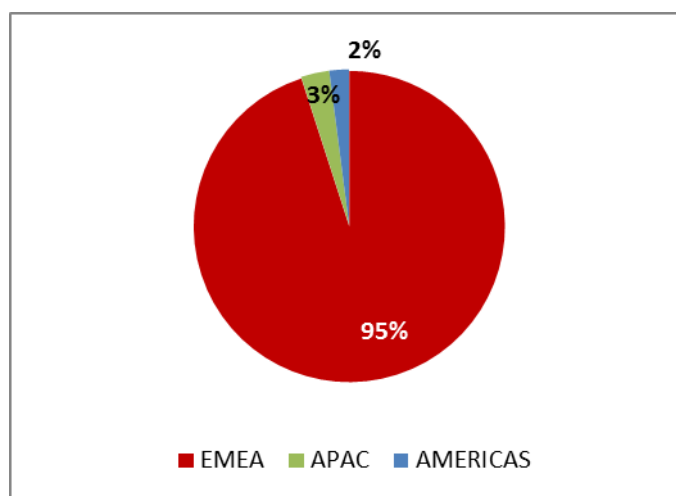


Figure 10 - Ireland order volumes per region (by order giver location - Q4 2017)

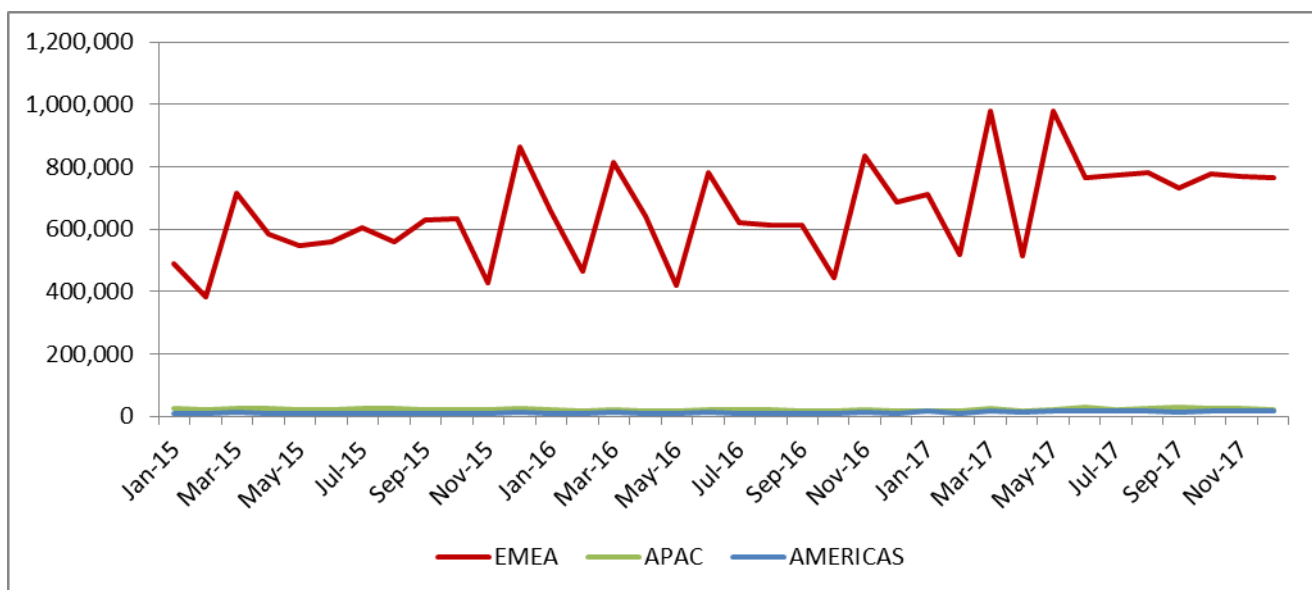


Figure 11 - Ireland order volumes evolution per region

Ireland regional split of automation and standardisation rates

ISO automation rates increased in all regions. The EMEA-based order giver increased from 9.5% in Q4 2016 to 12.4% in Q4 2017. In APAC and Americas, the rate increased sharply to respectively 26.6% and 18.2% in Q4 2017 compared to 18.1% and 9.6% in Q4 2016.

The total automation (ISO + proprietary) rate increased in APAC to 80.6% in Q4 2017 compared to 79.3% in Q4 2016. In EMEA and Americas, the rate decreased to respectively 97.4% and 72.1% in Q4 2017 against 97.7% and 85.8% in Q4 2016.

	ISO automation			Total automation (ISO+proprietary formats)		
	EMEA	APAC	Americas	EMEA	APAC	Americas
Q4 2015	11.4%	16.6%	10.0%	96.8%	77.7%	83.1%
Q4 2016	9.5%	18.1%	9.6%	97.7%	79.3%	85.8%
Q4 2017	12.4%	26.6%	18.2%	97.4%	80.6%	72.1%

Table 10 – Ireland fund order automation rates evolution by region

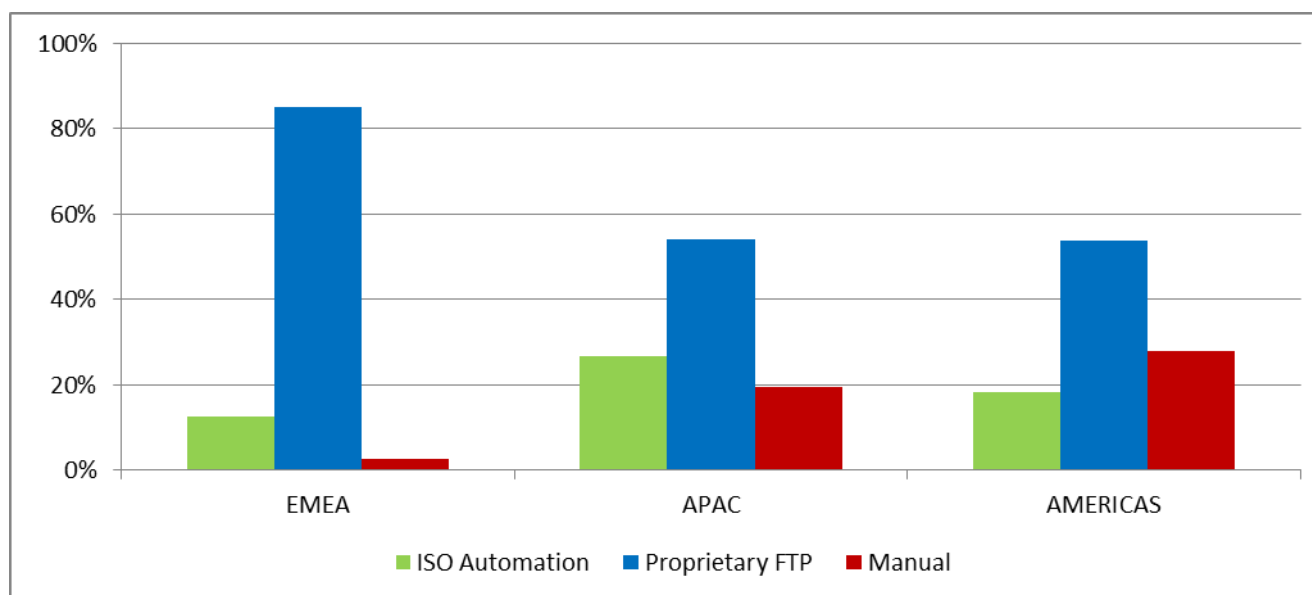
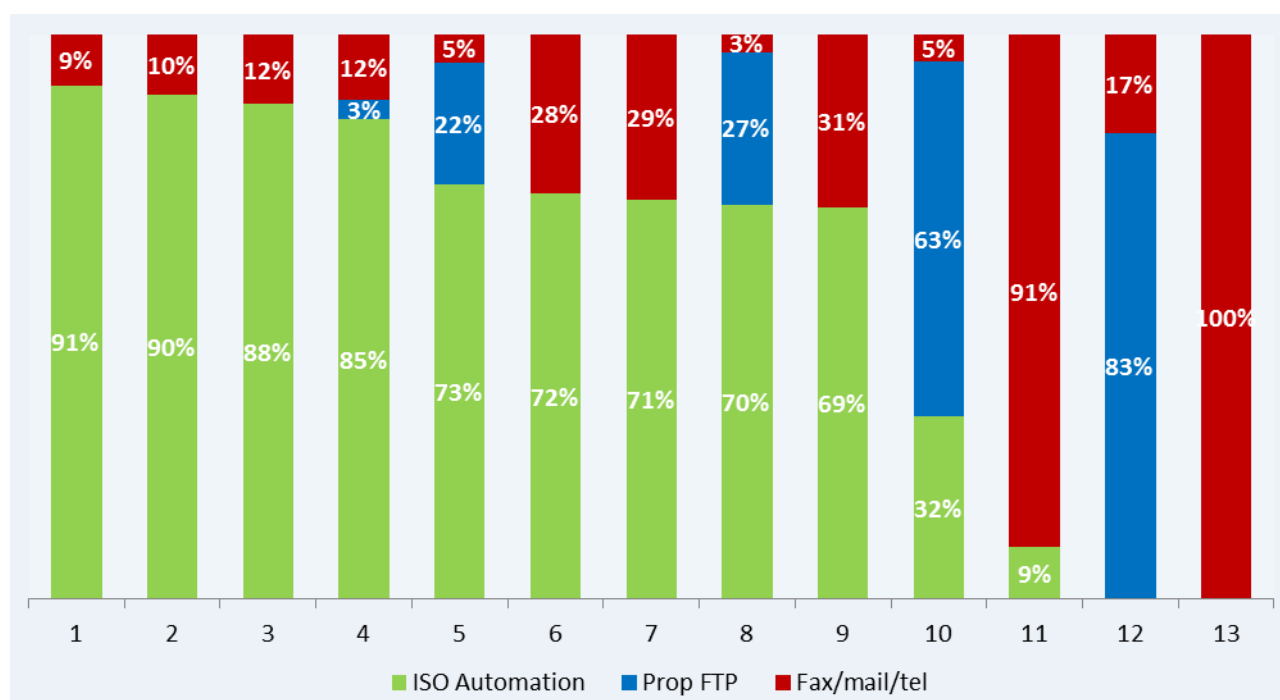


Figure 12 – Ireland fund order processing rates per region (Q4 2017)

D. Standardisation of fund processing in Germany in 2017

Germany is the largest fund distribution market in the EU with well over 80 million population. Fund investment penetration is still low as only 20+ million inhabitants are estimated to hold fund units and shares. The Praxisforum Depotbanken (PFD) and BVI, the German Funds Association, agreed three years ago to cooperate on a survey of processing standardisation levels in the German fund market. This case study presents after 2015 and 2016 now the fund processing transactions in 2017 between distributors or platforms – often banks – and currently 13 depository banks (“Verwahrstellen”) of different size acting as transfer agents (TA) of German domiciled funds (DE ISINs). This is not the full picture as transactions within the distribution chain before reaching the TA may also use other means of communication. For instance, it is possible that financial advisors communicate with their platforms on the basis of fax or email. It should also be remembered that German funds are settling in the local CSD and not with a TA.

- **Survey coverage: 13 Verwahrstellen (referred to as TAs)** contributed to the survey (compared to 11 TAs in 2016); they cover about 90% of the German market. The order volumes processed by the 13 survey contributors reached 0.74 million orders in 2017.



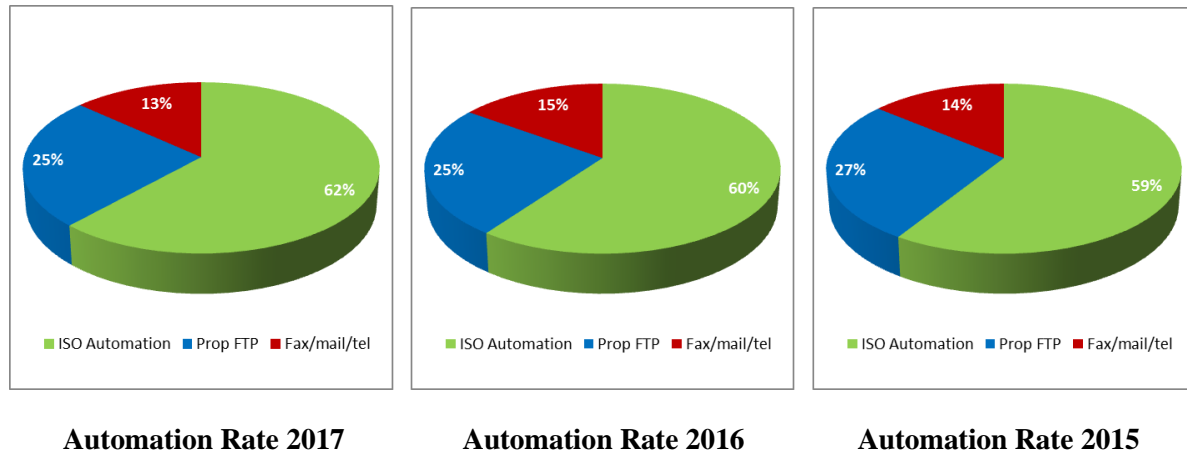
Germany fund order processing rates 2017

- **Total automation rate⁷** of orders in 2017 is **87% as compared to 85% in 2016**. However, the above graph also shows a great dispersion of automation levels sometimes with

⁷ The ‘total automation rate’ is the sum of the ‘ISO Automation’, and the ‘Prop FTP’ rate.

considerable levels of non ISO format solutions and still considerable amounts of manual processing.

- **ISO automation rate⁸** reached **62%** in 2017 compared to **60%** in 2016.
- **25%** of the orders were processed using non ISO solutions in 2017.



BVI and the Praxisforum Depotbanken expect further improvement of automation rates in fund processing in Germany against the background of ISO 20022 settlements in T2S as well as general pressure on costs of funds.

⁸ The 'ISO automation rate' corresponds to the standardisation rate, i.e. the rate of automated orders using an SWIFT network or ISO 20022.

E. Next report

The next joint EFAMA-SWIFT Fund Processing Standardisation report is planned for publication in Q4 2018 and will cover the development during the first half of 2018.
