

Expansion of FLEX Historical Service

Tokyo Stock Exchange, Inc. September 2020



Overview of FLEX Historical Service Expansion



- Tokyo Stock Exchange, Inc. (TSE) has provided historical tick data as "FLEX Historical Service".
- TSE is planning to expand FLEX Historical Service. TSE will contribute to the enhancement of service value and user convenience through the expansion of this service. The changes from the current service are shown in the table below.
- The new service will be launched at the end of May 2021, and the current service will end at September 2021. Please see page 9 for schedule details.

#	Item	Current	New	Expected effect
1	Data format	CSV File	PCAP(Packet Capture) File	•Improvement of analysis on Linux
2	Data item	-	Addition of Timestamp in JPX Collocation	 Utilization for reality back- testing
3	Compression method	ZIP	GZIP	Improvement of operability on LinuxImprovement of compression ratio
4	Delivery channel	FTP	Web API	Bandwidth alleviationEfficient data reception
5	Access authority /Fees	Data for the entire period	Monthly /All-period/Spot	·Optimization of cost burden

#1 Data format



- TSE will add new headers such as the timestamp of the captured packets to the current message structure.
- Currently the messages are decoded. But in the new service, it will not be decoded.

[Packet Structure]

(Current)

It is decoded.

Service Header									Us	ser	Data							
Me	Me Se	7 %	Z M C M	Se Di:	Issu Clas Coc	Iss		Tag				Tag			Ta	ag		
essage ngth	erial No.	essage ⁄pe	change ide	ession istinction	ssue :lassification :ode	sue Code		ID	Data		•••••		ID	Data		ID	Data	
ex. 1	ex. 1301 _BP 201209034 1780000+							22	80000	+4	12800	000)+1	1030	32	000000	009400)1 01

(New in PCAP format)

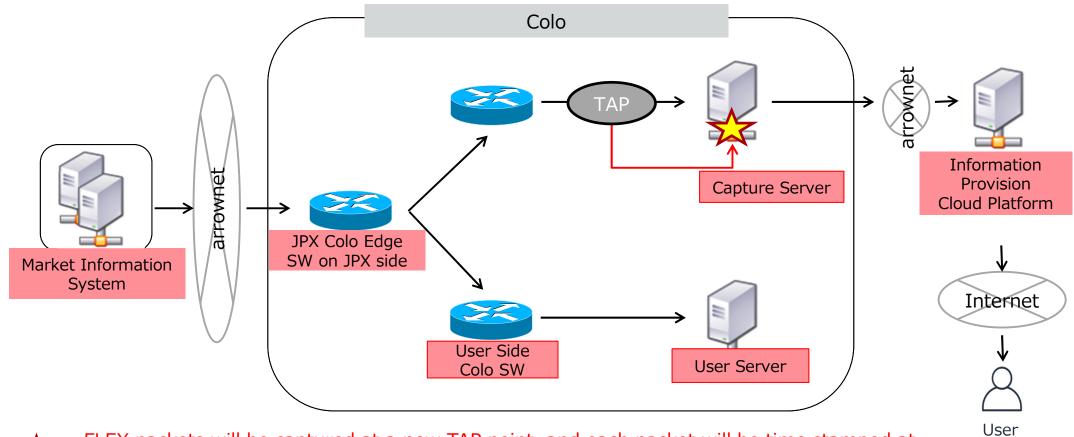
It is not decoded. (binary data)

_	za io mat december. (zamer)																
	Tin	Time Stamp Ethernet Header		er	IP H	eac	ler	UDP/TCP Header			Current Message						
			Ser	vice He	ader				User Data								
Ţ	ا کا آ	M ₁			Is		Tā	ag				Tag		Ta	ıg		
	Message Length	Message Serial No.	Message Type	Exchange Code	Session Distinction	Issue Classification Code	Issue Code		ID	Data		•••••		ID	Data	ID	Data

#2 Data item



- FLEX Historical Data provides information for each multicast group acquired from both FLEX lines.
- A high-accuracy packet capture is achieved by pressing a time stamp in the JPX collocation area.
- In order to enable Colo users of the data to conduct close-to-reality back testing, TSE is planning to install New Server in a network similar to what a Colo user established.
- For details on the file structure and correspondence when the packet is lost, etc., please refer to the "Announce of Test Data①" on page 9.



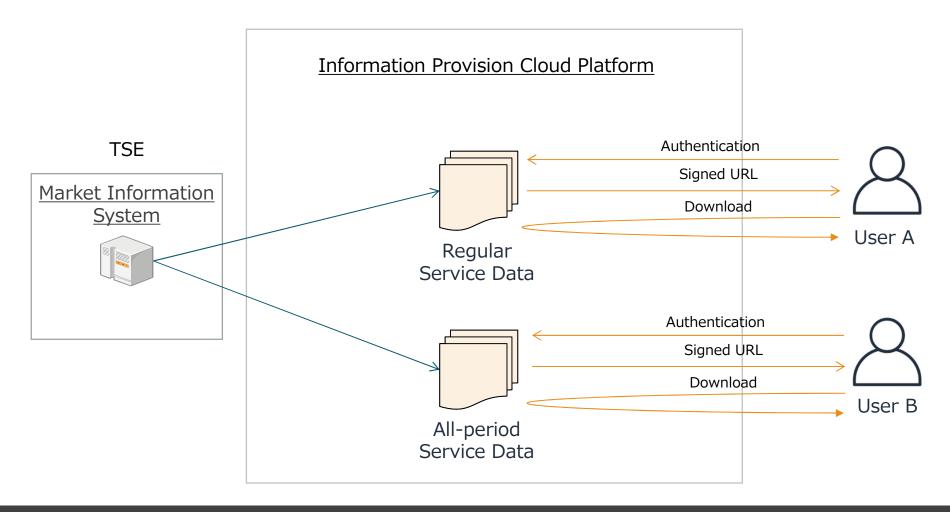


FLEX packets will be captured at a new TAP point, and each packet will be time stamped at the Capture Server.

#4 Delivery channel



- We will change the delivery channel using FTP from the TMI server to Information Provision Cloud Platform(New).
- Currently, the transfer rate is set no more than 20Mbps, but using Information Provision Cloud Platform will reduce the bandwidth limit and shorten the download time.
- We will divide the plan according to the period of the target data and grant access authority according to the contracted plan. Details are described on next pages.



#5 Access authority/Fees



- We will revise the price list according to access authority.
- Those who are subscribed as of May 31, 2021 can use the current price list until September 2021.

[Current] per month, (JPY)

Service	Single Entity Corporate Usage	Group Company Corporate Usage	External Distribution Volume Charge Type (per user)	External Distribution Fixed Rate Type
FLEX Standard Historical (Cash Equities)	95,000	142,500	57,000	285,000
FLEX Full Historical	142,000	213,000	85,200	426,000
FLEX Standard Historical (Cash Equities) & FLEX Full Historical Set	177,750	266,625	106,650	533,250
ToSTNeT Historical	50,000	75,000	30,000	150,000
Real Time TOPIX Historical	50,000	75,000	30,000	150,000
FLEX Standard Historical (Futures)	60,000	90,000	36,000	180,000

#5 Access authority/Fees



- We will grant access authority according to the contracted plan.
 - Regular Service : Data for the last month
 - All-period Service : Data for all historical
 - > Spot Data Service : Data for one month from the period before Regular Service.

[update] per month , (JPY)

Service	Regular Service Single Entity Corporate Usage	Regular Service Group Company Corporate Usage	External Distribution Volume Charge Type (per user)	All-period Data Service	Spot Data Service
FLEX Standard Historical (Cash Equities)	100,000	150,000	59,900	300,000	40,000
FLEX Full Historical	150,000	225,000	89,500	450,000	60,000
FLEX Standard Historical (Cash Equities) & FLEX Full Historical Set	187,000	280,500	112,000	561,000	74,800
ToSTNeT Historical	50,000	75,000	31,500	150,000	20,000
Real Time TOPIX Historical	50,000	75,000	31,500	150,000	20,000
FLEX Standard Historical (Futures)	60,000	90,000	37,800	180,000	24,000

#5 Access authority/Fees



The following price list applies for academic use*.

per month , (JPY)

	per month, (31 1)
Service	All-period Data Service Academic usage
FLEX Standard Historical (Cash Equities)	50,000
FLEX Full Historical	75,000
FLEX Standard Historical (Cash Equities) & FLEX Full Historical Set	94,000
ToSTNeT Historical	25,000
Real Time TOPIX Historical	25,000
FLEX Standard Historical (Futures)	30,000

^{*}Use of the information for non-commercial activity by a non-profit organization or an individual belonging to such organization for conducting research/studies whose results are not used for commercial purposes. The customer shall not publish the results of the research/study in a form where the original information may be obtained by a third party. The customer shall cooperate with TSE's requests regarding the results of the research/study.

Schedule Outline



- We will inform you that we will provide test data and verify connectivity to the new infrastructure before the new service is launched.
 - Test Data : PCAP format sample files, Connection Specification
 - Test Data2: PCAP format sample files with high-precision time stamp
- The new service will launch on May 31, 2021, and the transition period from that date to September 2021.
 - ** The data before the transition period will be provided in Information Provision Cloud Platform with the current file format(CSV files, GZIP).
- We will contact you individually regarding the changes in the contract due to the launch of the new service.
- Detailed schedule and specifications will be announced as soon as they are determined.

		CY 2	2020		CY 2021									
	9	10	11	12	1	2	3	4	5	•••	8	9		
Service				Test Da	ta①◆	Launch c	of the nev	v service	(5/31)★	Para	llel operat	tion		
						Test Dat	a② ◆			End of	current	service ★		
Information				unce of Data①	Annou Test D	nce of Oata②								
				In	formation	about co	ntract cha	nges		Start	of new c	ontract ◆		

Contact



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