

Trading Instruments Reference Specification

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1. Introduction

The Instruments Reference is an XML file describing trading instruments available in the trading system.

The Instruments Reference is valid for one trading day. It becomes publicly available to trading participants before the market opens, following the overnight trading system restart.

The Instruments Reference file is available at the following address: https://download.itsx.kz/TS/instruments/.

This document describes the XML structure of the Instruments Reference. The Instruments Reference consists of the root element `exchange` and nested elements:

- `balance_instruments` — descriptions of balance instruments,
- `trade_modes` — descriptions of trading modes,
- `traded_instruments` — descriptions of traded instruments.

1.1. Balance Instruments

Balance instruments represent various assets and liabilities that can be accounted for in a participant's portfolio. Examples of balance instruments include:

- currency;
- stock issues;
- T+ market obligations;
- futures;
- bonds;
- options.

Balance instruments corresponding to obligations may have different lifecycle stages, during which they transform into other forms. For example, a stock future converts to a spot obligation on the settlement date, which in turn is settled either by delivery of the stock or rolled over to the next day.

Each element describing a balance instrument within `balance_instruments` has an identifier specified in the `balance_id` attribute. This identifier is used as a reference to this instrument in other elements within `balance_instruments` (for example, in the `underlying_id` attribute of the `spot` element), as well as in `instrument`, `period`, and `underlying` elements. All balance instrument identifiers are unique within the `exchange` element.

1.2. Trading Modes

A trading mode groups similar trading instruments. Currently, a trading mode defines parameters for fee calculation mechanism, as well as addressability and usage of pairings in trading within that mode. Thus, addressed and addressless operations are executed using different trading instruments.

Each `tradeMode` element describing a trading mode has a unique identifier specified in the `trade_mode_id` attribute. This identifier can be used as a reference in `instrument` elements via the `trade_mode_id` attribute.

1.3. Trading Instruments

The `traded_instruments` element contains all trading instruments available for executing trades on the current trading day. Information about a trading instrument is defined within periods of continuous trading — the `period` element containing periods related to the current trading day and the evening session of the previous trading day. The portfolio of rights and obligations corresponding to one lot of a trading instrument is specified per trading period.

A trading instrument contains numeric (`instrument_id`) and symbolic (`symbol`) identifiers, as well as information defining the rights and obligations arising from execution of orders for that trading instrument.

Each `instrument` element describing a traded instrument has a mandatory unique identifier specified in the `instrument_id` attribute. The combination of `symbol` and `trade_mode_id` elements is also unique.

1.4. Volume Granularity

Regardless of routing direction, the volume of any order is specified in internal lots of the trading system.

The internal lot size in the trading system may differ from the lot size in external systems for the same trading instrument. The lot size of a trading instrument depends on the period and is specified in the spot element (lot attribute).

2. Reference Elements

2.1. Legend

In the tables, the following notation is used in the “Incoming elements model” row:

1. A plus sign (**+**) after an element name means that this element is mandatory and may be specified more than once. In the diagram, the path to such elements is denoted as 1..∞.
2. An asterisk (*****) after an element name means that this element is optional and may be specified more than once. In the diagram, the path to such elements is denoted as 0..∞.
3. A question mark (**?**) after an element name means that this element is optional and may be specified no more than once.
4. The absence of a symbol at the end of an element name means that the element is mandatory and may be specified no more than once.

2.2. Element `exchange`

The `exchange` element is the root element of the Instruments Reference. It contains blocks describing balance instruments, trading modes, and traded instruments.

Diagram	
Incoming Elements Model	option_series, balance_instruments, trade_modes, traded_instruments

2.3. Element `option_series`

The `option_series` element describes an option series.

Used in elements	Element exchange
Attributes	

Attribute Name	Data Type	Required	Description
series_id	xs:integer	required	Series identifier
code	xs:string	required	Derivatives market obligation code
desc	xs:string	required	Full obligation name in English
desc_ru	xs:string	required	Full obligation name in Russian
section	xs:string	required	Market section to which the option belongs
lot	xs:decimal	required	Lot size in units of the base asset identified by the `underlying_id` field
date_exec	xs:date	required	Execution date in YYYY-MM-DD format
date_expire	xs:date	required	Expiration date in YYYY-MM-DD format
underlying_id	xs:integer	required	Base asset identifier
exec_type	xs:integer	required	Option execution type: • 0: delivery; • 1: cash-settled

Attribute Name	Data Type	Required	Description
exec_style	xs:integer	required	Option execution style: • 1: American; • 2: European
series_type	xs:integer	required	Option periodicity: • 1: daily; • 2: weekly; • 3: monthly; • 4: quarterly
strike_step	xs:decimal	required	Strike step

2.4. Element `balance_instruments`

The `balance_instruments` element contains an unlimited number of various balance instruments and base assets. Some balance instruments may reference other balance instruments within this block.

Diagram	
Used in elements	Element exchange
Incoming elements model	currency* , issue* , spot* , option*, bond*

2.5. Element `currency`

The `currency` element describes a balance instrument such as currency.

Used in elements	Element balance_instruments

Attributes

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
code	xs:string	required	Currency code
desc	xs:string	required	Full currency name in English
desc_ru	xs:string	required	Full currency name in Russian
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test
min_volume	xs:decimal	required	Minimum possible asset volume
section	xs:string	required	Market section to which the currency belongs

2.6. Element `issue`

The `issue` element describes a balance instrument such as a stock issue.

Used in elements	Element balance_instruments
Attributes	

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
code	xs:string	required	Ticker
desc	xs:string	required	Full stock name in English
desc_ru	xs:string	required	Full stock name in Russian
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test
min_volume	xs:decimal	required	Minimum lot size
section	xs:string	required	Market section to which the stock belongs

2.7. Element `spot`

The `spot` element describes a balance instrument such as a T+ market obligation. This is an obligation to deliver a specific asset (of type `currency` or `issue`) with a specified execution date.

Used in elements	Element balance_instruments
Attributes	

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
code	xs:string	required	Code of the T+ market obligation
date_exec	xs:date	required	Execution date in YYYY-MM-DD format
desc	xs:string	required	Full name of the obligation in English
desc_ru	xs:string	required	Full name of the obligation in Russian
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test
lot	xs:decimal	required	Lot size in units of the futures contract (the balance instrument whose identifier is specified in the `underlying_id` attribute)
section	xs:string	required	Market section to which the obligation belongs

Attribute name	Data type	Required	Description
shift	xs:integer	required	Shift of the execution date from the current date in working days
underlying_id	xs:integer	required	Underlying asset identifier

2.8. Element `futures`

The `futures` element describes a balance instrument such as a futures contract. It is an obligation either to deliver the underlying instrument at a predetermined price (deliverable futures) or to settle the accrued difference in value (cash-settled futures), with predetermined execution and expiration dates.

Used in elements	Element balance_instruments

Attributes

Attribute Name	Data Type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
code	xs:string	required	Derivatives market obligation code
desc	xs:string	required	Full obligation name in English
desc_ru	xs:string	required	Full obligation name in Russian
section	xs:string	required	Market section to which the futures contract belongs
date_exec	xs:date	required	Execution date in YYYY-MM-DD format
date_expire	xs:date	required	Expiration date in YYYY-MM-DD format
lot	xs:decimal	required	Lot size in units of the underlying asset, the balance instrument identified by the `underlying_id` attribute
underlying_id	xs:integer	required	Underlying asset identifier
exec_type	xs:integer	required	Futures contract type: • 0: deliverable; • 1: cash-settled
is_test	xs:boolean	required	Test instrument flag: • false: production; • true: test
cfi_code	xs:string	required	CFI code of the financial instrument

2.9. Element `option`

The `option` element describes a balance instrument such as an option.

Used in elements	Element balance_instruments

Attributes

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
series_id	xs:integer	required	Series identifier
code	xs:string	required	Derivatives market obligation code
desc	xs:string	required	Full name of the obligation in English
desc_ru	xs:string	required	Full name of the obligation in Russian
section	xs:string	required	Market section to which the option belongs
strike	xs:decimal	required	Strike price
option_type	xs:integer	required	Option type: • 0 (Call); • 1 (Put)
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test

2.10. Element bond

The `bond` element describes a balance instrument such as a bond.

Used in elements: Element balance_instruments

Attributes

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Balance instrument identifier
code	xs:string	required	Ticker
desc	xs:string	required	Full bond name in English
desc_ru	xs:string	required	Full bond name in Russian
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test
min_volume	xs:decimal	required	Minimum lot size
section	xs:string	required	Market section to which the bond belongs
date_maturity	xs:date	required	Maturity date in YYYY-MM-DD format

2.11. Element accrued_interests

The `accrued_interests` element contains a list of accrued coupon income for a bond.

Used in elements	Element bond
Incoming elements model	accrued_interest*

2.12. Element accrued_interest

The accrued_interest element contains attributes: date date and the amount of accrued coupon income as a decimal fraction value.

Used in elements	Element accrued_interests

Attributes

Attribute name	Data type	Required	Description
date	xs:date	required	Date in YYYY-MM-DD format
value	xs:decimal	required	Accrued coupon income value

2.13. Element trade_modes

The trade_modes element contains an unlimited number of descriptions of various trading modes.

Used in elements	Element exchange
Incoming elements model	tradeMode+

2.14. Element tradeMode

The tradeMode element contains a description of a specific trading mode.

Used in elements	Element trade_modes

Attributes

Attribute name	Data type	Required	Description
trade_mode_id	xs:integer	required	Trading mode identifier
name	xs:string	required	Trading mode name in English
name_ru	xs:string	required	Trading mode name in Russian
is_address	xs:integer	required	Addressability of the trading mode: • 1: addressed; • 0: non-addressed

Attribute name	Data type	Required	Description
is_multileg	xs:integer	required	Trading in bundles: • 1: bundle trading mode; • 0: atomic instruments trading mode
is_ext_close	xs:integer	required	Presence of closing auction flag: • 1: present; • 0: absent
is_otc	xs:integer	required	Off-exchange trading mode flag: • 1: present; • 0: absent
is_ipo	xs:integer	required	Primary placement trading mode flag: • 1: present; • 0: absent

2.15. Element `traded_instruments`

The `traded_instruments` element contains an unlimited number of trading instruments with descriptions.

Used in elements	Element exchange
Incoming elements model	instrument+

2.16. Element `instrument`

The `instrument` element contains descriptions of the trading instrument parameters. Some parameters are grouped by trading period and contained in the `period` element. The trading period is defined by the start and end date and time. Trading periods for one instrument do not overlap.

Trading instruments can be matched with liquidity pool instruments. Information about these instruments is contained in the `exch_instrument` elements.

Commission rates applied to this instrument are listed in the `fee_rates` element.

Diagram	
Used in elements	Element traded_instruments
Incoming elements model	period+ , exch_instrument* , fee_rates

Attributes

Attribute name	Data type	Required	Description
instrument_id	xs:integer	required	Trading instrument identifier

Attribute name	Data type	Required	Description
auction_dir	xs:integer	required	Auction direction: • 0: regular auction; • 1: reverse auction
be_mode	xs:integer	required	Best execution trading mode: • 0: liquidity pool trading mode; • 1: trading mode on St. Petersburg Exchange at liquidity pool prices
curr_price	xs:string	required	Currency in which the instrument price is set
desc	xs:string	required	Full name in English
desc_ru	xs:string	required	Full name in Russian
is_test	xs:boolean	required	Test instrument flag: • false: real; • true: test
fee_scheme	xs:integer	required	Fee calculation mechanism: • 1: calculated from the rate set as a percentage of the trade price; • 2: calculation by bundles from the price of the first part multiplied by the number of days until expiration; • 3: calculation by bundles from the price of the first part without multiplication by the number of days until expiration; • 4: maker-taker for spot at members • 5: maker-taker for prediction market
symbol	xs:string	required	Symbolic instrument identifier
legs_count	xs:integer	required	Number of elements in the bundle
price_increment	xs:decimal	required	Minimum price step size
scalping_type	xs:integer	required	Commission scalping type: • 0: no scalping; • 1: regular scalping; • 2: inverse scalping
step_price	xs:decimal	required	Cost of the minimum price step
trade_mode_id	xs:integer	required	Trading mode identifier. This identifier can be used to find the corresponding `tradeMode` element, where this identifier is specified in the `trade_mode_id` attribute

Attribute name	Data type	Required	Description
type	xs:string	required	Trading instrument type: • f: futures; • t: T+N; • o: option; • r: repo; • pr: linked buy-sell transactions; • sw: swap; • dvp: with full collateral
category	xs:integer	required	Bit mask of instrument categories: • 1: (UNQUALIFIED_CLIENT_PROHIBITION): instrument available only to clients with "Qualified investor" status; • 2: (FOREIGNSECURITY_CLIENT_PROHIBITION): Foreign stocks requiring testing; • 4: (FOREIGNETF_CLIENT_PROHIBITION): Foreign ETFs requiring testing; • 8: (UNQUOTRUSECURITY_CLIENT_PROHIBITION): Stocks not included in quotation lists; • 16: (DERIVATIVES_CLIENT_PROHIBITION): PFI; • 32: (UNRATEDRUBOND_CLIENT_PROHIBITION): —; • 64: (FOREIGNBOND_CLIENT_PROHIBITION): —; • 128: (STRUCTEDBOND_CLIENT_PROHIBITION): Structured bonds; • 256: (STRUCTEDINCOMEBOND_CLIENT_PROHIBITION): Bonds with structured income; • 512: (REPO_CLIENT_PROHIBITION): Repo agreements; • 1024: (CLOSEDFUND_CLIENT_PROHIBITION): ZPIF; • 2048: (DELISTED_CLIENT_PROHIBITION): —

2.17. Element `exch_instrument`

The `exch_instrument` element is a reference to an instrument in the liquidity pool. It contains the liquidity pool identifier in the required `market` attribute. The reference to the instrument itself can be specified in one of two ways:

1. using the unique instrument identifier in the liquidity pool, specified in the `instrument_id` attribute,
2. using a group of attributes describing the unique instrument in the liquidity pool: `code`, `code_extra` and `code_group`.

Used in elements	Element instrument

Attributes

Attribute name	Data type	Required	Description
code	xs:string	optional	Instrument ticker
code_extra	xs:string	optional	Instrument code

Attribute name	Data type	Required	Description
code_group	xs:string	optional	Section to which the instrument belongs
instrument_id	xs:integer	optional	Instrument identifier in the liquidity pool
market	xs:integer	required	Liquidity pool identifier

2.18. Element `period`

The `period` element is used to specify the trading instrument parameters for a specific trading period. It contains the description of the specific trading period for the instrument, specified in the element attributes, and contains the `underlying` element describing the number of elements in the bundle.

Used in elements	Element instrument
Incoming elements model	underlying+, markets

Attributes

Attribute name	Data type	Required	Description
auction_type	xs:integer	required	Auction type: • 0: double anonymous counter auction with proportional volume allocation; • 1: double anonymous counter auction with parity volume allocation; • 2: auction with matching by order registration time; • 3: auction with full parameter match for addressed trading; • 4: opening auction; • 5: closing auction; • 6: no trading; • 7: closing auction in liquidity pool
currency_id	xs:integer	required	Instrument currency identifier. This identifier can be used to find the corresponding `spot` element, where this identifier is specified in the `balance_id` attribute
start	xs:dateTime	required	Period start date and time. Time is specified with millisecond precision in YYYY-MM-DDThh:mm:ss.fff format
finish	xs:dateTime	required	Period end date and time. Time is specified with millisecond precision in YYYY-MM-DDThh:mm:ss.fff format

2.19. Element `underlying`

The `underlying` element describes the number of elements in the bundle. The value in the `qty` attribute must match the value of the `legs_count` attribute in the `instrument` element.

Used in elements	Element period

Attributes

Attribute name	Data type	Required	Description
balance_id	xs:integer	required	Instrument identifier. This identifier can be used to find the corresponding child element of the `balance_instruments` tag, where this identifier is specified in the `balance_id` attribute
flags	xs:integer	required	Flags field (value should be processed in binary number system, flags can be combined): • 0x1: additional obligation due to corporate event; • 0x2: adjustment by clearing center of obligation due to corporate event; • 0x4: income transfer due to corporate event; • 0x8: principal obligation flag
number	xs:integer	required	Leg ordinal number
qty	xs:decimal	required	Number of balance instrument units

2.20. Element `markets`

The `markets` element contains a list of liquidity pools on which this instrument is traded during the specified period.

Used in elements	Element period
Incoming elements model	market*

2.21. Element `market`

The `id` attribute of the `market` element contains the liquidity pool identifier on which this instrument is traded during the specified period.

Used in elements	Element markets

Attributes

Attribute name	Data type	Required	Description
id	xs:integer	required	Liquidity pool identifier

2.22. Element `fee_rates`

The `fee_rates` element contains a list of commission rates applied to trades executed with this trading instrument.

Used in elements	Element instrument

Incoming elements model	fee_rate*

2.23. Element fee_rate

The fee_rate element contains attributes: commission rate number index and commission amount as a decimal fraction value.

Used in elements	Element fee_rates
Attributes	

Attribute name	Data type	Required	Description
index	xs:integer	required	Commission rate number
value	xs:decimal	required	Commission rate value

In this version of the trading system, the fee_rate group has five elements. Sequence of elements:

1. Minimum fee rate, in instrument currency.
2. Fee rate for pre-delivery trades, in instrument currency.
3. Taker fee rate depending on fee scheme: portion of trade volume in price currency for shares; amount of price currency per contract for derivatives; portion of the first leg value multiplied by repo duration for repo.
4. Maker fee rate depending on fee scheme: portion of trade volume in price currency for shares; amount of price currency per contract for derivatives; portion of the first leg value multiplied by repo duration for repo.
5. Accuracy.

Values of third and fourth elements are based on the mechanism of fee calculation specified in the fee_schema attribute.

Appendix A. Liquidity pool identifiers

`0` (DEFAULT) — liquidity pool at the discretion of the trading system

`1001` (TRADSYS) — all available liquidity pools

`2000` (ITS) — liquidity pool of ITS

`1015` (IB) — execution on US liquidity pools