

*Foundation for Assistance for Internet
Technologies and Infrastructure Development*

**Description of EPP Extensions in
Flexireg System**

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1. Introduction

This Description of EPP Extensions in Flexireg System ("Description") features all the extensions of the EPP protocol implemented in flexireg domain registration system.

This document does not feature the EPP protocol in full, since the protocol itself is the industry standard and is implemented in accordance with STD 69.

Extensions from this Description are used during the General Availability phase. Extensions for Sunrise, Landrush, and Claims phases are given in a separate document.

Terms, definitions, and developments standards used in this Description are given in "Specifications for Registrars' Interaction with Flexireg System."

2. Extensions for Domain object

2.1. DNSSec extension

urn:ietf:params:xml:ns:secDNS-1.1

This extension is used during delegation of domains for protection from attacks related to use of forged DNS data during domain name resolution.

Examples of using this extension are given in "Examples of Requests and Responses."

2.2. IDN extension

urn:ietf:params:xml:ns:idn-1.0

This extension is used for registration of Internationalized Domain Names (domain names displayed in a language-specific script or alphabet).

Examples of using this extension are given in "Examples of Requests and Responses."

2.3. FEE extension

FEE extension is used to register premium domain names (Premium Domains) during the Landrush and General Availability phases. The extension is designed to transmit financial information in registrars' queries and Flexireg registration system's responses when checking domain availability, registering, renewing, or transferring domain names to another registrar.

2.3.1. Source

The extension has been implemented in accordance with the following document:

<https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00>

However, this document draft-ietf-regext-epp-fees-00 contains a mistake:

in Clause 3.5. "Account Balance" and Clause 3.6. "Credit Limit" it is stated that tags are required for the <transfer op = request> query, but there are no "balance" and "creditLimit" tags in the XML schema contained in the transferResultType document.

Therefore, the extension has been created based on the XML schema available in this document.

2.3.2. General Information

- Fee-based operations with Premium Domains (create, renew, and transfer) are only possible with the use of the "urn:ietf:params:xml:ns:fee-0.11" extension which is to be specified when executing the EPP login command. If an EPP query for a fee-based operation with a Premium Domain does not contain the extension, the query will not be executed and the registration system will return an error.
- If Premium Domain registration begins with the Landrush phase, the extension can contain the "phase = landrush" and "subphase = dN" elements, where N corresponds to the period number from the beginning of the Landrush phase, starting with 1. If the extension contains a correct fee for which a domain name can be registered at the time of processing the query, but the specified values of the phase and subphase parameters are invalid, the query will fail and the domain name will not be registered. The time of the commencement and end of the Landrush period, the number and duration of subphase periods, during which the application submission fee for Premium Domain registration remains unchanged, are available in schedules published on <http://faitid.org/en/projects/moscow/documents>.
- The <fee:class> attribute can assume a value corresponding to the Premium Domain price tier (tier1, tier2,... tierN) from the Premium Domain tier table (hereinafter, the "tier table") or the "standard" value if the domain name is not a Premium Domain.
- The Premium Domain registration fee before the end of the Landrush period is calculated as the sum of:
 - the Premium Domain registration fee from the tier table, which contains corresponding tiers for all Premium Domains;
 - the application submission (EPP query for registration) fee for Premium Domain registration during the current subphase of the Landrush period.

The Premium Domain registration fee is available in "Pricing" published on <http://faitid.org/en/projects/moscow/documents>.

In this case, the "tier1" price tier corresponds to the "Premium 1" domain tier, the "tier2" price tier corresponds to "Premium 3," ... and "tierN" corresponds to "Premium N."

- The funds for domain registration will be immediately debited upon the successful completion of the registrar's query. The process of debiting funds from the personal account cannot be postponed. Therefore, the "applied" attribute in the <fee:fee> element can only assume the "immediate" value, not "delayed."
- The value of the <fee:currency> element should always correspond to the agreement currency (the currency that is specified in the agreement and used for mutual payments), if this element is specified in the EPP query extension; otherwise, the query will fail.
- Server responses can contain the <fee:balance> element indicating the amount in the agreement currency available on the personal account.
- The <fee:creditLimit> element is not used and cannot be found in responses from the registration system because credits are not granted.

- When conducting fee-based operations with Premium Domains, the registrar should specify the accurate operation cost. If the registrar indicates a higher or lower cost, the operation will not be conducted and the query will fail.

2.3.3. EPP <check> query

The server response to the <check> query contains information about domain name availability and fee-based operations.

FEE extension elements in the query:

- <fee:command> — a mandatory element; admissible values: create/renew/transfer/restore.
- During the Landrush period, only the “phase” and “subphase” elements containing values that are valid at the time of processing the query can be specified in the query. If values indicated are different from those valid at the time of processing the query, avail=0 will be returned. Therefore, one cannot find out the registration fee different from that effective at the time of processing the query by specifying “phase = landrush” and “subphase” in the <check> query.
- <fee:currency> — an optional element. If the element is specified, its value should match the agreement currency.
- <fee:period> — an optional element. If the element is not specified, the minimum available period will be returned.
- <fee:class> — an optional element. The element value contains a price tier of the requested Premium Domain available in the tier table. If the tier indicated in the query does not match the price tier of the requested domain name, the registration system will return avail=0.

The <fee:chkData> element of the registration system's response will contain the following child elements:

- <fee:currency> — value of the code of the agreement currency.
- <fee:fee> — operation cost in the agreement currency.
- <fee:period> — period for which a domain name can be registered. The “unit” attribute specifies the value units of the period (only value “y” — calendar year — is possible).
- <fee:cd avail attribute> — 0 or 1 is returned as the “avail” attribute value depending on whether the cost can be calculated based on query conditions. If it cannot be calculated, avail=0 will be returned, and the response will not contain the <fee:fee> element. For example, this situation might occur if an invalid subphase, <fee:class>, or <fee:currency> is specified in the query.
- <fee:command> — one of the possible values: create, renew, transfer, or restore.
- <fee:object><domain:name> — contains a domain name.
- <fee:reason> — description of the reason if <fee:cd avail attribute=0>.
- <fee:class> — tier of the domain name. The tier list is available in the tier table.
- <fee:fee refundable attribute> — an opportunity to get back the funds spent on the operation. Values: 0 - no, 1 - yes.
- <fee:fee grace-period attribute> — period's duration when one can get its funds back if refundable=1.
- <fee:fee description attribute> — textual description.

If the Landrush period is launched for the Premium Domain, the response can contain several sets of <fee:fee> elements.

2.3.4. EPP <transfer> query

The extension is not specified in the query

If the object of the query is a Premium Domain and the transfer of the domain to another registrar results in cancellation or refund, the element <fee:trnData> of the registration system's response:

a) returns to the Gaining Registrar:

- <fee:currency> value of the code of the agreement currency.
- <fee:fee> — operation cost in the agreement currency.
- <fee:period> — specifies a period for which the domain is renewed as a result of the transfer, the “unit” attribute specifies the value units (“y” corresponds to a calendar year).
- <fee:fee refundable attribute > — an opportunity to get back the funds spent on transfer (e.g. to decline during the Transfer Grace period). Values: 0 — no, 1 — yes.
- <fee:fee grace-period attribute> — period's duration when one can get its funds back if refundable=1
- <fee:fee description attribute> — textual description of the reasons for withdrawal of funds.

b) returns to the Losing Registrar:

- <fee:currency> — value of the code of the agreement currency.
- <fee:period> — specifies a period for which the domain is renewed as a result of the transfer, the “unit” attribute specifies the value units (“y” corresponds to a calendar year).
- <fee:credit> — the amount of funds to be returned to the registrar’s personal account upon successful completion of the Premium Domain transfer.

2.3.5. EPP <create> query

Upon the <create> query in the FEE extension:

- Only one element <fee:fee> is to be specified indicating the accurate Premium Domain registration fee at the time of processing the query in the agreement currency. If the Premium Domain registration fee at the time of processing the query differs from the one specified in the query, then its execution will result in an error.
- Other elements can be specified in accordance with XML schema, but their specification is not mandatory.

<fee:creData> response element from the registration system to the request will contain the following child elements:

- <fee:currency> — value of the code of the agreement currency.
- <fee:fee> — operation cost in the agreement currency.
- <fee:period> — period for which the domain has been registered. The “unit” attribute specifies the value units of the period (Only value “y” — a calendar year — is possible).
- <fee:fee refundable attribute> — an opportunity to get back the funds spent on the registration operation. Values: 0 — no, 1 — yes. Since the Add Grace Period is not available during domain registration, the “refundable” value always equals zero.
- <fee:fee grace-period attribute > — period's duration when one can get its funds back if refundable=1.
- <fee:fee description attribute> — textual description of the reasons for withdrawal of funds.
- <fee:balance> — the amount available on the personal account after the query has been executed.

2.3.6. EPP <delete> query

The extension is not specified in the <delete> query

If the object of the query is a Premium Domain and the execution of the query results in a refund to the registrar's personal account (e.g. cancellation of the domain during the Renew Grace period), then the registration system's response will include a <fee:delData> element containing the following child elements:

- <fee:currency> value of the code of the agreement currency.
- <fee:credit> — the amount returned to the registrar's personal account as a result of the query

execution.

- <fee:balance> — the amount available on the personal account after the query has been executed.

2.3.7. EPP <renew> query

Upon the <renew> query in the FEE extension:

- Only one element <fee:fee> is to be specified indicating the accurate Premium Domain registration fee at the time of processing the query in the agreement currency. If the Premium Domain registration fee at the time of processing the query differs from the one specified in the query, then its execution will result in an error.
- Other elements can be specified in accordance with XML schema, but their specification is not mandatory.

The <fee:renData> element of the registration system's response to the query will contain the following child elements:

- <fee:currency> value of the code of the agreement currency.
- <fee:fee> — operation cost in the agreement currency.
- <fee:fee refundable attribute> — an opportunity to get back the funds spent on transfer (e.g. to decline during the Transfer Grace period). Values: 0 — no, 1 — yes.
- <fee:fee grace-period attribute> — period's duration when one can get its funds back if refundable=1.
- <fee:fee description attribute> — textual description of the reasons for withdrawal of funds.
- <fee:balance> — the amount available on the personal account after the query has been executed.

2.3.8. EPP <transfer> request query

Upon <transfer op="request"> query in the FEE extension:

- Only one element <fee:fee> is to be specified indicating the accurate Premium Domain registration fee at the time of processing the query in the agreement currency. If the Premium Domain registration fee at the time of processing the query differs from the one specified in the query, then its execution will result in an error.
- Other elements can be specified in accordance with XML schema, but their specification is not mandatory.

The <fee:trnData> element from the registration system's response to the query will contain the following child elements:

- <fee:currency> value of the code of the agreement currency.
- <fee:fee> — operation cost in the agreement currency.
- <fee:fee refundable attribute> — an opportunity to get back the funds spent on transfer (e.g. to decline during the Transfer Grace period). Values: 0 — no, 1 — yes.
- <fee:fee grace-period attribute> — period's duration when one can get its funds back if refundable=1.
- <fee:fee description attribute> — textual description of the reasons for withdrawal of funds.

2.3.9. EPP <update> restore query

Upon the <update> restore query in the FEE extension:

- Only one element <fee:fee> is to be specified indicating the accurate Premium Domain registration fee at the time of processing the query in the agreement currency. If the Premium Domain registration fee at the time of processing the query differs from the one specified in the query, then its execution will result in an error.

- Other elements can be specified in accordance with XML schema, but their specification is not mandatory.

The <fee:upData> element from the registration system's response to the query will contain the following child elements:

- <fee:currency> value of the code of the agreement currency.
- <fee:fee refundable attribute> — an opportunity to get back the funds spent on transfer (e.g. to decline during the Transfer Grace period). Values: 0 — no, 1 — yes Due to the fact that during domain restoration process the funds are not refundable, the value always equals zero.
- <fee:balance> — the amount available on the personal account after the query has been executed.

3. Extensions for Contact object

tcicontact-ext-1.0

Commands for creating and editing the Contact object are extended with a new mandatory element - type of contact. Depending on the type of contact, objects will have different sets of attributes. It is necessary to specify one of the two types of contact:

- "person." This type of contact means that the contact is for an individual.
- "organization." This type of contact means that the contact is for an organization (legal entity). Set of attributes of a Contact object is the subject for the specified type.

Set of attributes of a Contact object depends on the specified type.

Examples of using extensions are given in "Examples of Requests and Responses."

3.1. Attributes for extension of legal entity's contact

Contact object with Organization type is intended for description of a legal entity's contact. The object contains the following attributes:

- contact type - for legal entities it must be <contact:organization>;
 - o legalAddr - complex attribute for organization's legal address. The contact may contain several addresses, including addresses in different languages (with different values of Type attribute). It includes the following elements and attributes:
 - type - contact's language. There are two ways of using this attribute:
 - local - the address will be specified in Russian, using the Cyrillic characters and digits;
 - int - the address will be specified using the Latin characters and digits.
 - street - name of the street. The attribute is a text string. It may be filled with Latin or Cyrillic letters, depending on the value of Type attribute. Spaces and punctuation marks are also allowed. This is a mandatory attribute;
 - city - name of the city. The attribute is a text string. It may be filled with Latin or Cyrillic letters, depending on the value of Type attribute. Spaces and punctuation marks are also allowed. This is a mandatory attribute;
 - sp - region's code. The attribute shall be filled with a two-letter code;
 - pc - postal code;
 - cc - two-letter country code. This is a mandatory attribute;
 - o TIN - organization's taxpayer identification number. This is a mandatory attribute. The length of this attribute is 22 characters.

3.2. Attributes for extension of individual's contact

Contact object with Person type is intended for description of an individual's contact. The object contains the following attributes:

- contact type - for individuals it must be <contact:person>;
 - o birthday - date of birth. The attribute must be filled with digits using this format: YYYY-MM-DD.
 - o passport - string with details from the ID. The attribute must contain the name of document in English and the number of document.
 - o TIN - individual's taxpayer identification number. This is not a mandatory attribute. It may be left blank.

3.3. Schema for extension of Create and Update commands for Contact object

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.tcinet.ru/epp/tci-contact-ext-1.0"
xmlns:contExt="http://www.tcinet.ru/epp/tci-contact-ext-1.0"
xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xmlns="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
  <import namespace="urn:ietf:params:xml:ns:contact-1.0" schemaLocation="contact-1.0.xsd" />

  <annotation>
    <documentation>
      Extensible Provisioning Protocol v1.0 contact extentions provisioning
      schema.
    </documentation>
  </annotation>

  <!-- Child elements found in EPP commands. -->
  <element name="create" type="contExt:createType" />
  <element name="update" type="contExt:updateType" />

  <!-- Child elements of the <create> command. -->
  <complexType name="createType">
    <sequence>
      <choice>
        <element name="person" type="contExt:personType" /> <element
        name="organization" type="contExt:orgType" /> </choice>
      </sequence>
    </complexType>

  <!-- Child elements of organization interface -->
  <complexType name="legalAddrType">
    <sequence>
      <element name="street" type="contact:optPostalLineType" minOccurs="1"
      maxOccurs="3" />
      <element name="city" type="contact:postalLineType" /> <element name="sp"
      type="contact:optPostalLineType" minOccurs="0" />
      <element name="pc" type="contact:pcType" minOccurs="0" /> <element name="cc"
      type="contact:ccType" />
    </sequence>
    <attribute name="type" type="contact:postalInfoEnumType" use="required" />
  </complexType>

  <simpleType name="TINType">
    <restriction base="token">
```

```

        <maxLength value="22" />
    </restriction>
</simpleType>

<complexType name="orgType">
    <sequence>
        <element name="legalAddr" type="contExt:legalAddrType" minOccurs="1"
            maxOccurs="2" />
        <element name="TIN" type="contExt:TINType" />
        <element name="disclose" type="contExt:orgDiscloseType" minOccurs="0" />
    </sequence>
</complexType>

<complexType name="orgDiscloseType">
    <sequence>
        <element name="legalAddr" type="contact:intLocType" minOccurs="0" maxOccurs="2"
            />
        <element name="TIN" minOccurs="0" />
    </sequence>
    <attribute name="flag" type="boolean" use="required" />
</complexType>

<!-- Child elements of person interface -- >
<complexType name="personType">
    <sequence>
        <element name="birthday" type="date" />
        <element name="passport" type="contExt:passportType" /> <element name="TIN"
            type="contExt:TINType" minOccurs="0" /> <element name="disclose"
            type="contExt:personDiscloseType" minOccurs="0" />
    </sequence>
</complexType>

<simpleType name="passportType">
    <restriction base="token">
        <minLength value="1" />
        <maxLength value="512" />
    </restriction>
</simpleType>

<complexType name="personDiscloseType">
    <sequence>
        <element name="birthday" minOccurs="0" />
        <element name="passport" minOccurs="0" />
        <element name="TIN" minOccurs="0" />
    </sequence>
    <attribute name="flag" type="boolean" use="required" /> </complexType>

<!-- Child elements of the <update> command. -- >
<complexType name="updateType">
    <sequence>
        <element name="chg" type="contExt:chgType" minOccurs="0" /> </sequence>
</complexType>

<!-- Data elements that can be changed. -- >
<complexType name="chgOrgType">
    <sequence>
        <element name="legalAddr" type="contExt:legalAddrType" minOccurs="0" maxOccurs="2" />
        <element name="TIN" type="contExt:TINType" minOccurs="0" /> <element name="disclose"
            type="contExt:orgDiscloseType" minOccurs="0" />
    </sequence>

```

```

</complexType>

<complexType name="chgPersonType">
  <sequence>
    <element name="birthday" type="date" minOccurs="0" /> <element name="passport"
type="contExt:passportType" minOccurs="0" />
    <element name="TIN" type="contExt:TINType" minOccurs="0" /> <element name="disclose"
type="contExt:personDiscloseType" minOccurs="0" />
  </sequence>
</complexType>

<!-- Data elements that can be changed. -->
<complexType name="chgType">
  <sequence>
    <choice>
      <element name="organization" type="contExt:chgOrgType" /> <element name="person"
type="contExt:chgPersonType" /> </choice>
    </sequence>
</complexType>

<!-- Child response elements. -->
<element name="infData" type="contExt:createType" />
</schema>

```