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Parts Catalog SDK

for

ᐱETAdirect

Version 4.5
Part Number E62392-01

TOA Technologies 2014

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1 Introduction

1.1 Document Purpose

The document is intended to provide description of methods and SOAP transactions used in the Parts Catalog API and to ensure its successful interaction with the Clients' external systems.

1.2 Scope of the Document

This document describes the API methods used by the ETAdirect Parts Catalog to exchange information (send requests and accept responses) with external systems. The overview of the actual operation of ETAdirect Parts Catalog and its GUI is provided in a separate dedicated document.

This document is up-to-date with ETAdirect version 4.5.14 functionality.

1.3 Target Audience

The document is intended for developers and programmers working with the ETAdirect Parts Catalog in order to integrate ETAdirect with external systems.

1.4 Glossary

Term	Explanation
API	Application Programming Interface – a particular set of rules and specifications that software programs follow to communicate and interact with each other
Company	1) Legal entity, using ETAdirect 2) Entity that represents a Client in ETAdirect system; company is created by TOA Technologies during the process of implementation
Inventory	Equipment that can be installed or deinstalled during an activity
ISO 8601 format	see http://en.wikipedia.org/wiki/ISO_8601
Property	Field and field value assigned to an entity in ETAdirect (to user, resource, activity or inventory). There are fields and custom properties
SOAP	Lightweight protocol for exchange of information in a decentralized, distributed environment
SOAP 1.1	See http://www.w3.org/TR/2000/NOTE-SOAP-20000508/
SOAP Interface	Interface used to receive requests and return responses via SOAP
SOAP Client Application	Application running at the Client's site and providing interaction with ETAdirect server via SOAP

2 Parts Catalog Introduction

The Parts Catalog functionality has been designed as a means of remote access to the company's spare parts index to be used by mobile personnel. The idea behind it is that while technicians assigned installation jobs usually know fairly well which inventory they are going to install and load their trucks accordingly; however, those to perform repairs often will be able to determine the parts necessary for replacement only at the customer's site after tests and diagnostics. Therefore, the Parts Catalog has been developed with a focus on maintenance and repair jobs. It enables the technician to look up the spare part required for replacement, discuss the replacement terms (price, period, etc.) with the customer, place an order for the spare part, find an alternative if the customer does not accept the initial offer and issue an invoice.

ETAdirect Parts Catalog is available as a module within the Manage and Mobility Applications and as an API ensuring integration with the customer's external systems.

3 Parts Catalog API Methods

Parts Catalog API provides a set of methods used to manage the ETAdirect Parts Catalog. Catalogs can be created and searched using single operations ('create_catalog' and 'search_catalog', respectively). At the same time, data uploading to an existing catalog involves a series of operations ('start_catalog_transaction', 'upload_catalog', 'commit_catalog_transaction' and 'rollback_catalog_transaction'). Optionally, the list of transactions for a certain catalog upload can be obtained by the 'get_transactions_list' method. Weights can be added or deleted by means of the 'upload_weights' and 'delete_weights' operations. Inventory types of the existing item types can be updated by the 'update_types' method. An entire catalog can be deleted using the 'delete_catalog' method.

The list of all methods that can be implemented with the API and their brief description is provided in the table below for reference. For the details of a specific method please refer to the corresponding section.

Method	Description
'create_catalog'	Creates a new catalog
'start_catalog_transaction'	Starts an upload transaction for an existing catalog
'upload_catalog'	Uploads data to an existing catalog
'commit_catalog_transaction'	Closes an upload transaction for an existing catalog
'rollback_catalog_transaction'	Aborts the current transaction and deletes all data uploaded during such transaction
'search_catalog'	Searches for existing catalogs
'upload_weights'	Uploads item weights to an existing catalog
'delete_weights'	Deletes item weights from an existing catalog
'update_types'	Updates inventory types of the item types in the catalog
'delete_catalog'	Deletes all catalog data
'get_transactions_list'	Gets the list of transactions for an existing catalog

3.1 'user' Authentication Structure

All SOAP requests have a 'user' node used for authentication and described in more details below:

Name	Type	Description
now	string	current time in ISO 8601 format
company	string	case-insensitive identifier of the Client, for whom data is to be retrieved (the instance name)
login	string	case-insensitive identifier of a specific user within the Company
auth_string	string	authentication hash; auth_string = md5(now + md5(password)); where 'password' is case-sensitive set of characters used for user authentication provided by TOA Technologies during integration

For example:

```
<user>
    <now>2010-11-19T13:50:10Z</now>
    <company>sunrise</company>
    <login>soap</login>
    <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
</user>
```

3.1.1 Authentication

The node is used for the request authentication. If any of the situations below occur, authentication fails and the relevant error is returned.

Authentication fails if:

1	'now'	is different from the current time on the server and this difference exceeds the predefined time-window (30 minutes by default)
2	'company'	cannot be found in the ETAdirect
3	'login'	cannot be found for this company
4	user with this 'login' is not authorized to use the method	
5	'auth_string'	is not equal to md5(now+md5(password))
		For example: 'now' = "2005-07-07T09:25:02+00:00" and password = "Pa$$w0rD" then md5 (password) = "06395148c998f3388e87f222bfd5c84b" concatenated string = = "2005-0707T09:25:02+00:0006395148c998f3388e87f222bfd5c84b" **auth_string should be:** auth_string = "62469089f554d7a38bacd9be3f29a989";

Otherwise authentication is successful and the request is processed further.

3.2 Parts Catalog API Permission

The user's access to the Parts Catalog API is controlled by the special 'Parts Catalog' SOAP permission set in the 'Permissions' screen of the Manage Application (Figure 1).

Figure 1: 'Parts Catalog' API permission

Users for which the permission is set to 'Show' can use the Parts Catalog API methods.

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4   Catalog Creation

4.1   'create_catalog' Method

The *'create_catalog'* method is used to create a new Parts Catalog.

4.1.1   'create_catalog' Request

The *'create_catalog'* request specifies:

- unique catalog label and language combination

- catalog structure description (sent as 'field schemas')

The request of 'create_catalog' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'<u>user</u>' node
label	Yes	string	technical name of the catalog to be created
language	Yes	string	language of the catalog to be created
name	Yes	string	name of the catalog to be displayed in GUI
field_schemas	Yes	array	array of 'field_schema' elements, each of which contains one of the fields to be set for the catalog
type_schemas	No	array	array of 'type_schema' elements, each of which contains an item type and may also contain the inventory type corresponding to such item type

4.1.1.1   'field_schema' Element of 'create_catalog' Request

The 'field_schema' element of the 'create_catalog' request contains the following fields:

Field	Required	Type	Description
label	Yes	string	field identifier
name	Yes	string	field name to be displayed in GUI
property_label	No	string	identifier of the inventory property to transfer data from the catalog to the inventory form. 'property_label' is the label of the selected property in ETAdirect
searchable	No	bool	parameter defining whether the field is used for search **default value**: 0 (non-searchable)
preview	No	bool	parameter defining whether the field is cached in offline mode and displayed in the search results in offline **default value**: 0 (included in search results only in the online mode)

4.1.1.2 'type_schema' Element of 'create_catalog' Request

The 'type_schema' element of the 'create_catalog' request contains the following fields:

Field	Required	Type	Description
item_type	Yes	string	item type according to the catalog
inventory_type	No	string	inventory type according to settings in ETAdirect

4.1.1.3 'create_catalog' Request Example

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
   <soapenv:Body>
      <ns1:create_catalog>
           <user>
                <now>2010-11-19T13:50:10Z</now>
                <company>sunrise</company>
                <login>soap</login>
                <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
           </user>
           <label>first_catalog</label>
           <language>en</language>
           <name>The name of the catalog</name>
           <field_schemas>
                <field_schema>
                     <label>part_id</label>
                     <name>Part number</name>
                     <property_label>part_number</property_label>
                     <searchable>1</searchable>
                     <preview>1</preview>
                </field_schema>
                <field_schema>
                     <label>vendor</label>
                     <name>Vendor</name>
                     <searchable>1</searchable>
                     <preview>1</preview>
                </field_schema>
                <field_schema>
                     <label>descr</label>
                     <name>Description</name>
                     <searchable>1</searchable>
                </field_schema>
                <field_schema>
                     <label>price</label>
                     <name>Cost</name>
                     <property_label>price</property_label>
```

```
                    <preview>1</preview>
                </field_schema>
            </field_schemas>
            <type_schemas>
                <type_schema>
                    <item_type>parts</item_type>
                    <inventory_type>parts_general</inventory_type>
                </type_schema>
                <type_schema>
                    <item_type>cartridge</item_type>
                    <inventory_type>parts_cartridge</inventory_type>
                </type_schema>
            </type_schemas>
        </ns1:create_catalog>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

4.1.2 'create_catalog' Response

The response to the 'create_catalog' request consists of the following elements describing the transaction result:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.

4.1.2.1 'create_catalog' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:create_catalog_response>
            <result_code>0</result_code>
        </ns1:create_catalog_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5   Catalog Upload Methods Description

When data is uploaded to the catalog, the whole catalog is uploaded. After the upload transaction is completed, all previous data is deleted from the catalog. During the catalog upload the previous data can still be used (the 'search_catalog' operation is available).

A started transaction can be either committed (closed with all uploaded data applied) or rolled back (aborted with all uploaded data deleted). Only one started transaction is possible for a single catalog.

5.1   'start_catalog_transaction' Method

The 'start_catalog_transaction' method is used to start a data upload transaction for a particular catalog. The method returns a unique transaction key which is to be used to commit or roll back the transaction.

5.1.1   'start_catalog_transaction' Request

The 'start_catalog_transaction' request must specify:

- label and language of the catalog to which data is to be uploaded

The request of 'start_catalog_transaction' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	Yes	string	technical name of the catalog to which data is to be uploaded
language	Yes	string	language of the catalog to which data is to be uploaded

5.1.1.1 'start_catalog_transaction' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
        <SOAP-ENV:Body>
           <ns1:start_catalog_transaction>
               <user>
                   <now>2010-11-19T13:50:10Z</now>
                   <company>sunrise</company>
                   <login>soap</login>
                   <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
               </user>
               <label>first_catalog</label>
               <language>en</language>
           </ns1:start_catalog_transaction>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.1.2 'start_catalog_transaction' Response

The 'start_catalog_transaction' response returns a unique transaction key which is to be used to commit or roll back the transaction.

The 'start_catalog_transaction' response contains the following elements:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.
transaction_key	string	unique key of the transaction. Returned only when the 'result_code' is 0.

5.1.2.1 'start_catalog_transaction' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:start_catalog_transaction_response>
          <result_code>0</result_code>
          <transaction_key>e7ae407bc7465f4c1266bdfbfea521fa</transaction_key>
        </ns1:start_catalog_transaction_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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5.2 'upload_catalog' Method

The 'upload_catalog' method uploads data to the selected catalog. During the upload transaction (before its commitment) only the data uploaded in the previous committed transaction is available for search. The uploaded items become available only after the transaction is committed.

5.2.1 'upload_catalog' Request

The *'upload_catalog'* request must specify:

- transaction key obtained as the result of the 'start_catalog_transaction*'* operation

- items to be uploaded to the catalog and their properties

The request of 'upload_catalog' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'<u>user</u>' node
transaction_key	Yes	string	unique transaction key obtained as the result of the 'start_catalog_transaction' operation
catalog	Yes	array	array of 'item' elements each of which contains properties of a single item to be uploaded to the catalog

5.2.1.1 'item' Element of 'upload_catalog' Request

The 'item' element of the 'upload_catalog' request consists of the following fields:

Field	Required	Type	Description
type	Yes	string	item type If the type specified in the request does not exist in the catalog, such type will be added to the catalog.
label	Yes	string	item identifier
weight	No	int	item weight used for items sorting during cache loading. Items with greater weight are the first to be loaded in the cache. **default value**: 0
fields	Yes	array	array of 'field' elements, each of which contains one of the item fields and its value
linked_items	No	array	array of 'linked_item' elements, each containing an alternative item with which the item defined in the 'item' element can be substituted and the information on such alternative item
images	No	array	array of 'image' elements, each containing a URL of the item image

- **'field' Element of 'upload_catalog' Request**

The 'field' element of the 'upload_catalog' request consists of the following fields:

Field	Required	Type	Description
label	Yes	string	field identifier
value	Yes	string	field value

- **'linked_item' Element of 'upload_catalog' Request**

The 'linked_item' element of the 'upload_catalog' request consists of the following fields:

Field	Required	Type	Description
label	Yes	string	unique linked item identifier
display_data	No	string	text comments to the linked item to be displayed in GUI

- **'image' Element of 'upload_catalog' Request**

The 'image' element of the 'upload_catalog' request consists of the following fields

Field	Required	Type	Description
image_url	Yes	string	valid URL address of the image associated with the item defined in the 'item' element

Note: if the request contains several items with the same label, data of the last such item is used. If the request contains several fields with the same label, data of the last such field is used. If the request contains several linked items with the same label, data of the last such linked item is used.

5.2.1.2 'upload_catalog' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
        <SOAP-ENV:Body>
            <ns1:upload_catalog>
                <user>
                    <now>2010-11-19T13:50:10Z</now>
                    <company>sunrise</company>
                    <login>soap</login>
                    <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
                </user>
        <transaction_key>e7ae407bc7465f4c1266bdfbfea521fa</transaction_key>
        <catalog>
        <item>
            <type>parts</type>
            <label>RG5-7691-250CN</label>
            <weight>12</weight>
            <fields>
```

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```
            <field>
                               <label>vendor</label>
                               <value>HEWLETT PACKARD</value>
            </field>
            <field>
                               <label>descr</label>
                               <value>110V FUSER ASSEMBLY</value>
            </field>
            <field>
                               <label>price</label>
                               <value>943.80</value>
            </field>
        </fields>
        <linked_items>
            <linked_item>
                               <label>RG5-7691-250CN</label>
                               <display_data>1</display_data>
            </linked_item>
            <linked_item>
                               <label>RG5-7691-250CF</label>
                               <display_data>2</display_data>
            </linked_item>
            <linked_item>
                               <label>RG5-7691-250CZ</label>
                               <display_data>3</display_data>
            </linked_item>
        </linked_items>
        <images>
            <image>
                                 <image_url>http://www.storage-
service.com/rg5_7691_250cz.png</image_url>
            </image>
            <image>
                                 <image_url>http://www.storage-
service.com/rg5_7691_250cf.png</image_url>
            </image>
        </images>
    </item>
    <item>
            <type>parts</type>
            <label>H-AZ240135</label>
        <fields>
            <field>
                <label>vendor</label>
                <value>HARVESTED</value>
```

```
                  </field>
                  <field>
                     <label>descr</label>
                     <value>POWER SUPPLY UNIT</value>
                  </field>
                  <field>
                     <label>price</label>
                     <value>10.80</value>
                  </field>
               </fields>
               <linked_items>
                  <linked_item>
                     <label>H-AZ240136</label>
                     <display_data>1</display_data>
                  </linked_item>
               </linked_items>
               <images>
                  <image>
                     <image_url>http://www.storage-
service.com/rg5_7691_257cz.png</image_url>
                  </image>
               </images>
            </item>
            </catalog>
         </ns1:upload_catalog>
         </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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5.2.2 'upload_catalog' Response

The 'upload_catalog' response returns the count of items successfully uploaded in the current operation, the count of items not uploaded due to invalid data structure and the labels of not uploaded items.

The 'upload_catalog' response contains the following elements:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.
uploaded_count	int	number of successfully uploaded items. Returned only when the 'result_code' is 0.
not_uploaded_count	int	number of not uploaded items. Returned only when the 'result_code' is 0.
not_uploaded_labels	array	array of 'label' fields containing labels of item not uploaded in the transaction. Returned only when the 'result_code' is 0.

5.2.2.1 'not_updated_labels' Array of 'update_catalog' Response

The 'not_updated_labels' array of the 'update_catalog' response contains the following fields:

Field	Type	Description
label	string	labels of items not uploaded in the transaction due to invalid data structure

5.2.2.2 'upload_catalog' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
        <SOAP-ENV:Body>
                <ns1:upload_catalog_response>
                        <result_code>0</result_code>
                        <uploaded_count>1</uploaded_count>
                        <not_uploaded_count>1</not_uploaded_count>
                          <not_uploaded_labels>
                                <label>H-AZ240135</label>
                          </not_uploaded_labels>
                </ns1:upload_catalog_response>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.3 'commit_catalog_transaction' Method

The 'commit_catalog_transaction' method is used to close an active transaction and apply all uploaded data. After the transaction is committed, the uploaded items become available for search.

5.3.1 'commit_catalog_transaction' Request

The 'commit_catalog_transaction' request must specify:

- transaction key obtained as the result of the 'start_catalog_transaction' operation

The request of 'commit_catalog_transaction' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
transaction_key	Yes	string	unique transaction key obtained as the result of the 'start_catalog_transaction' operation

5.3.1.1 'commit_catalog_transaction' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
     <SOAP-ENV:Body>
       <ns1:commit_catalog_transaction>
         <user>
                <now>2010-11-19T13:50:10Z</now>
                <company>sunrise</company>
                <login>soap</login>
                <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
         </user>
         <transaction_key>e7ae407bc7465f4c1266bdfbfea521fa</transaction_key>
       </ns1:commit_catalog_transaction>
     </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.3.2 'commit_catalog_transaction' Response

The response to the 'commit_catalog_transaction' request consists of the following elements
describing the transaction result:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.

5.3.2.1 'commit_catalog_transaction' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
        <SOAP-ENV:Body>
                <ns1:commit_catalog_transaction_response>
                        <result_code>0</result_code>
                </ns1:commit_catalog_transaction_response>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.4 'rollback_catalog_transaction' Method

The 'rollback_catalog_transaction' operation is used to abort an active transaction and delete all data uploaded in such transaction. The catalog continues using the previous data.

5.4.1 'rollback_catalog_transaction' Request

The *'rollback_catalog_transaction'* request must specify:

- transaction key obtained as the result of the 'start_catalog_transaction' operation

The request of 'rollback_catalog_transaction' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'<u>user</u>' node
transaction_key	Yes	string	unique transaction key obtained as the result of the 'start_catalog_transaction' operation

5.4.1.1 'rollback_catalog_transaction' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:rollback_catalog_transaction>
          <user>
              <now>2010-11-19T13:50:10Z</now>
              <company>sunrise</company>
              <login>soap</login>
              <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
          </user>
          <transaction_key>e7ae407bc7465f4c1266bdfbfea521fa</transaction_key>
        </ns1:rollback_catalog_transaction>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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5.4.2 'rollback_catalog_transaction' Response

The response to the 'rollback_catalog_transaction' request consists of the following elements describing the transaction result:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.

5.4.2.1 'rollback_catalog_transaction' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
        <SOAP-ENV:Body>
                <ns1:rollback_catalog_transaction_response>
                        <result_code>0</result_code>
                </ns1:rollback_catalog_transaction_response>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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6   Transaction Management

6.1   'get_transactions_list' Method

The 'get_transations_list' method is used to get the list of upload transactions for the selected catalog. This method provides information about the catalog upload history. At the same time, it allows to view the list of active transactions along with their transaction keys.

6.1.1   'get_transactions_list' Request

The 'get_transactions_list' request must specify:

   •   label and language of the catalog the transaction list is to be obtained for

The request of 'get_transactions_list' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'<u>user</u>' node
label	Yes	string	technical name of the catalog the transaction list is requested for
language	Yes	string	language of the catalog the transaction list is requested for
status	No	string	status of the catalog transactions in a response (i.e. 'in_progress', 'committed', 'rolled_back') if this parameter is not set, the transactions with all statuses will be included in a response
from	No	int	the position of the transaction in the list, starting from which the transactions are to be selected the default value of this parameter is '0'
count	No	int	count of transactions in a response the default value of this parameter is '20'

6.1.1.1 'get_transactions_list' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:ns1="urn:toatech:PartsCatalog:1.0">
            <SOAP-ENV:Body>
                <ns1:get_transactions_list>
                    <user>
                        <now>2010-11-19T13:50:10Z</now>
                        <company>sunrise</company>
                        <login>soap</login>
                    <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
                    </user>
                    <label>first_catalog</label>
                    <language>en</language>
                    <status>in_progress</status>
                </ns1:get_transactions_list>
            </SOAP-ENV:Body>
        </SOAP-ENV:Envelope>
```

6.1.2 'get_transactions_list' Response

The response to the 'get_transactions_list' request consists of the following elements describing the list of found catalog transactions:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response '0' on success if the transaction fails, the 'result_code' is other than 0
error_msg	string	more specific description of the error returned only when the 'result_code' is other than 0
total	int	the total count of transactions
from	int	the position of the transaction in the list, starting from which the transactions are to be selected the default value of this parameter is 0
count	int	The actual number of transactions returned in a response
transactions	array	list of transactions found

6.1.2.1 'transaction' Element of 'get_transactions_list' Response

The 'transaction' element of the 'get_transactions_list' response contains the following fields
describing a transaction within the transactions list:

Field	Type	Description
catalog_label	string	label of the catalog for which the current transaction has been performed
catalog_language	string	language of the catalog for which the current transaction has been performed
transaction_key	string	unique key of the transaction obtained as the result of the 'start_catalog_transaction' operation
items_count	int	number of items uploaded within the current transaction
started	DateTime	the start date/time of the current transaction
completed	DateTime	the end date/time of the current transaction
status	string	status of the catalog transactions (i.e. 'in_progress', 'committed', 'rolled_back')

6.1.2.2 'get_transactions_list' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
      xmlns:ns1="urn:toatech:PartsCatalog:1.0">
          <SOAP-ENV:Body>
              <ns1:get_transactions_list_response>
                  <result_code>0</result_code>
                  <total>2</total>
                  <count>2</count>
                  <from>0</from>
                  <transactions>
                    <transaction>
                          <catalog_label>first_catalog</catalog_label>
                          <catalog_language>en</catalog_language>
        <transaction_key>cae1e6efdd38875c91eea05b260b8383</transaction_key>
                          <items_count>3</items_count>
                          <started>2014-03-05 14:51:43</started>
                          <completed>2014-03-05 14:53:43</completed>
                          <status>committed</status>
                    </transaction>
                    <transaction>
                          <catalog_label>first_catalog</catalog_label>
                          <catalog_language>en</catalog_language>
        <transaction_key>ff4fb3cf681d643aa49219d348244c2b</transaction_key>
                          <items_count>0</items_count>
                          <started>2014-03-07 14:51:43</started>
                          <completed></completed>
                          <status>in_progress</status>
                    </transaction>
```

```
            </transactions>
        </ns1:get_transactions_list_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7 Catalog Management Methods Description

7.1 'search_catalog' Method

The 'search_catalog' method is used to search for the existing Parts Catalogs.

7.1.1 'search_catalog' Request

The *'search_catalog'* request may specify:

- catalog label and language, if needed

The request of 'search_catalog' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	No	string	technical name of the catalog to search for
language	No	string	language of the catalog to search for

7.1.1.1 'search_catalog' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
<SOAP-ENV:Body>
        <ns1:search_catalog>
            <user>
                <now>2010-11-19T13:50:10Z</now>
                <company>sunrise</company>
                <login>soap</login>
                <auth_string>7160f16f31540cc07128404a8d878e69</auth_string>
            </user>
            <label>first_catalog</label>
            <language>en</language>
        </ns1:search_catalog>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7.1.2 'search_catalog' Response

The 'search_catalog' response contains the list of catalogs with their description and structure as well as the total number of items within. If a transaction is in progress for a catalog, the items uploaded during such transaction are not taken into account calculation of the total. During items upload to a newly created catalog, the operation returns an empty catalog ('items_count' = 0). During items upload to a catalog which already contained items before, only the previous items count is returned

(**Note**: only the items having 'weight' > 0 are counted).

The 'search_catalog' response contains the following elements:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.
catalogs	array	array of 'catalog' elements, each containing data of a single catalog

7.1.2.1 'catalog' Element of 'search_catalog' Response

The 'catalog' element of the 'search_catalog' response consists of the following fields:

Field	Type	Description
label	string	technical name of the catalog
language	string	language of the catalog
name	string	name of the catalog to be displayed in GUI
items_count	int	number of items in the catalog with 'weight' greater than 0
field_schemas	array	array of 'field_schema' elements, each containing one of the fields to be set for the catalog
type_schemas	array	array of 'type_schema' elements, each containing an item type and, optionally may also contain the inventory type corresponding to such item type

· **'field_schema' Element of 'search_catalog' Response**

The 'field_schema' element of the 'search_catalog' response consists of the following fields:

Field	Type	Description
label	string	field identifier
name	string	field name to be displayed in GUI
property_label	string	identifier of the inventory property to transfer data from the catalog to the inventory form in ETAdirect
searchable	bool	parameter defining whether the field is used for search **default value**: 0 (non-searchable)
preview	bool	parameter defining whether the field is cached in offline mode and displayed in the search results in offline **default value**: 0 (included in search results only in the online mode)

· **'type_schema' Element of 'search_catalog' Response**

The 'type_schema' element of the 'search_catalog' response consists of the following fields:

Field	Type	Description
item_type	string	item type according to the catalog
inventory_type	string	inventory type according to settings in ETAdirect

7.1.2.2 'search_catalog' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:search_catalog_response>
            <result_code>0</result_code>
            <catalogs>
                <catalog>
                    <label>first_catalog</label>
                    <language>en</language>
                    <name>The name of the catalog</name>
                    <items_count>485019</items_count>
                    <field_schemas>
                        <field_schema>
                            <label>vendor</label>
                            <name>Vendor</name>
                            <searchable>1</searchable>
                            <preview>1</preview>
                        </field_schema>
                        <field_schema>
                            <label>descr</label>
                            <name>Description</name>
                            <searchable>1</searchable>
                        </field_schema>
                        <field_schema>
                            <label>price</label>
                            <name>Cost</name>
                            <property_label>price</property_label>
                            <preview>1</preview>
                        </field_schema>
                    </field_schemas>
                    <type_schemas>
                        <type_schema>
                            <item_type>parts</item_type>
                            <inventory_type>parts_general</inventory_type>
                        </type_schema>
                        <type_schema>
                            <item_type>cartridge</item_type>
                            <inventory_type>parts_cartridge</inventory_type>
                        </type_schema>
                    </type_schema>
```

```
            </type_schemas>
          </catalog>
        </catalogs>
      </ns1:search_catalog_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

```
            </type_schemas>
```

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7.2 'upload_weights' Method

The 'upload_weights' method is used to upload weights for the catalog items. Weight is an optional parameter used for items sorting during cache loading. Items with greater weight are the first to be loaded to the cache. If the weight label of a particular item already exists, the 'upload_weights' operation overwrites the previous weight value with the new one.

The 'upload_weights' operation must be performed after the items have been already uploaded to the catalog. If the catalog items are updated, their weights are removed in the process, because the weights are associated with the old items.

7.2.1 'upload_weights' Request

The 'upload_weights' request must specify:

- label and language of the catalog to which weights are to be uploaded
- labels of the items for which weights are to be uploaded
- weight labels and values

The request of 'upload_weights' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	Yes	string	technical name of the catalog to which weights are to be uploaded
language	Yes	string	language of the catalog to which weights are to be uploaded
weights	Yes	array	array of 'weight' elements, each of which contains weight to be uploaded for the specified item

7.2.1.1 'weight' Element of 'upload_weights' Request

The 'weight' element of the 'upload_weights' request contains the following fields:

Field	Required	Type	Description
item_label	Yes	string	unique identifier of the item to which weight is to be uploaded
weight_label	Yes	string	unique identifier of the weight to be uploaded for the specified item
weight	Yes	int	value of the weight to be uploaded for the specified item

7.2.1.2 'upload_weights' Request Example

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:upload_weights>
            <user>
                <now>2013-12-25T11:37:40Z</now>
                <login>soap</login>
                <company>in429</company>
                <auth_string>3b3ec291807984a39e0e2a1f4d3aae21</auth_string>
            </user>
            <label>tttest2</label>
            <language>en</language>
            <weights>
                <weight>
                    <item_label>test_item1</item_label>
                    <weight>7</weight>
                    <weight_label>weight_label1</weight_label>
                </weight>
                <weight>
                    <item_label>test_item1</item_label>
                    <weight>12</weight>
                    <weight_label>weight_label2</weight_label>
                </weight>
                <weight>
                    <item_label>test_item2</item_label>
                    <weight>3</weight>
                    <weight_label>weight_label1</weight_label>
                </weight>
                <weight>
                    <item_label>test_item3</item_label>
                    <weight>4</weight>
                    <weight_label>weight_label1</weight_label>
                </weight>
            </weights>
        </ns1:upload_weights>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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7.2.2 'upload_weights' Response

The 'upload_weights' response returns the count of weights successfully uploaded in the operation.

The 'upload_weights' response contains the following elements:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.
uploaded_count	int	number of successfully uploaded weights. Returned only when the 'result_code' is 0.

7.2.2.1 'upload_weights' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:upload_weights_response>
            <result_code>0</result_code>
            <uploaded_count>4</uploaded_count>
        </ns1:upload_weights_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7.3 'delete_weights' Method

The 'delete_weights' method is used to delete all weights set for the items of the specified catalog.

7.3.1 'delete_weights' Request

The 'delete_weights' request must specify:

 • label and language of the catalog from which weights are to be deleted

The request of 'delete_weights' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	Yes	string	technical name of the catalog from which weights are to be deleted
language	Yes	string	language of the catalog from which weights are to be deleted

7.3.1.1 'delete_weights' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:delete_weights>
            <user>
                <now>2013-12-25T13:41:21Z</now>
                <login>soap</login>
                <company>in429</company>
                <auth_string>cf368aa2307a55112f640b449bf7fe46</auth_string>
            </user>
            <label>tttest2</label>
            <language>en</language>
        </ns1:delete_weights>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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7.3.2 'delete_weights' Response

The response to the 'delete_weights' request consists of the following elements describing the transaction result:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.

7.3.2.1 'delete_weights' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:delete_weights_response>
            <result_code>0</result_code>
        </ns1:delete_weights_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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7.4 'update_types' Method

The 'update_types' method is used to update item types belonging to a particular Parts Catalog. As the result of the 'update_types' operation, the inventory type labels of the specified item types are updated. If an item type sent in the request cannot be found in the Parts Catalog database, such item is skipped. If the inventory type label sent in the request for a particular item type is the same as the inventory type label existing for the same item type, such item type is not updated.

7.4.1 'update_types' Request

The 'update_types' request specifies:

- unique catalog label and language combination

- item types for which inventory type labels are to be updated

- new values of the inventory type labels

The request of 'update_types' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	Yes	string	technical name of the catalog to be created
language	Yes	string	language of the catalog to be created
type_schemas	No	array	array of 'type_schema' elements, each containing the label of the item type to be updated and, optionally, the inventory type to be set for such item type

7.4.1.1 'type_schema' Element of 'update_types' Request

The 'type_schema' element of the 'update_types' request contains the following fields:

Field	Required	Type	Description
item_type	Yes	string	item type label according to the catalog
inventory_type	No	string	inventory type label according to settings in ETAdirect

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7.4.1.2 'update_types' Request Example

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
      <ns1:update_types>
          <user>
              <now>2013-12-25T13:41:21Z</now>
              <login>soap</login>
              <company>in429</company>
              <auth_string>cf368aa2307a55112f640b449bf7fe46</auth_string>
          </user>
            <label>tttest2</label>
            <language>en</language>
            <type_schemas>
                <type_schema>
                    <item_type>some item type label</item_type>
                    <inventory_type>some inventory type label</inventory_type>
                </type_schema>
            </type_schemas>
      </ns1:update_types>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7.4.2 'update_types' Response

The 'update_types' response returns the count of successfully updated items and not updated items. If any items are not updated in the transaction, the response also contains the list of such type labels.

The 'update_types' response contains the following elements:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.
updated_count	int	number of successfully updated items
not_updated_count	int	number of items not updated in the transaction due to invalid data structure or non-existent item type label
not_updated_labels	array	array of 'label' fields containing labels of item types not updated in the transaction

7.4.2.1 'not_updated_labels' Array of 'update_types' Response

The 'not_updated_labels' array of the 'update_types' response contains the following fields:

Field	Type	Description
label	string	labels of item types not updated in the transaction due to invalid data structure or non-existent item type label

7.4.2.2 'upload_catalog' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:update_types_response>
            <result_code>0</result_code>
            <updated_count>1</updated_count>
            <not_updated_count>0</not_updated_count>
            <not_updated_labels/>
        </ns1:update_types_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7.5 'delete_catalog' Method

The 'delete_catalog' method is used to delete all data of the specified catalog.

7.5.1 'delete_catalog' Request

The 'delete_catalog' request must specify:

- label and language of the catalog to be deleted

The request of 'delete_catalog' contains the following elements:

Field	Required	Type	Description
user	Yes	struct	'user' node
label	Yes	string	technical name of the catalog from which weights are to be deleted
language	Yes	string	language of the catalog from which weights are to be deleted

7.5.1.1 'delete_catalog' Request Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:delete_catalog>
            <user>
                <now>2013-12-25T13:41:21Z</now>
                <login>soap</login>
                <company>in429</company>
                <auth_string>cf368aa2307a55112f640b449bf7fe46</auth_string>
            </user>
            <label>tttest2</label>
            <language>en</language>
        </ns1:delete_catalog>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

7.5.2 'delete_catalog' Response

The response to the 'delete_catalog' request consists of the following elements describing the transaction result:

Field	Type	Description
result_code	int	transaction result code. 'result_code' is always returned in a response. '0' on success. If the transaction fails, the 'result_code' is other than 0.
error_msg	string	more specific description of the error. Returned only when the 'result_code' is other than 0.

7.5.2.1 'delete_catalog' Response Example

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns1="urn:toatech:PartsCatalog:1.0">
    <SOAP-ENV:Body>
        <ns1:delete_catalog_response>
            <result_code>0</result_code>
        </ns1:delete_catalog_response>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

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