# FUNCTIONAL FEATURES OF THE TECHNICAL DOCUMENTATION CONTROL PROGRAM

**Dilshod Baratov**

*"Department of Automation and telemechanics of Tashkent state transport university" Department, DSc, associate Professor.,*

*Tashkent state transport university,* Tashkent, Uzbekistan

baratovdx@yandex.ru

**Elmurod Astanaliev**

*"Department of Automation and telemechanics of Tashkent state transport university" Department, Master's student,*

*Tashkent state transport university,* Tashkent, Uzbekistan

elmurod1246@mail.ru

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**Abstract:** The article describe in more detail these necessary features of the program. Let us proceed to the consideration of the functional features of the client part of the system. Functioning of the client of the automated system of accounting and control of signaling systems. For quick access to information stored in a single database of documents, a search procedure with different parameters is necessary. Let us consider in more detail the main program window, the tab selection window, the signaling device registration window, the device registration selection window.

**Keywords:** client, server, control of document execution, control of signaling systems, information window.

## INTRODUCTION

After connecting to the server, the user is presented with the main window for working with the program. At its core, it should be an SDI (single-document) window with a main menu and toolbar. This dialog box provides the user with all the basic functionality of the client program in an ergonomic manner, namely:

– input of documents;
– search for information;
– execution and control of documents;
– sending requests to the server to receive information.

The scheme of functioning of the client of the Automated system of accounting and control of signaling devices is shown in Fig. 1.
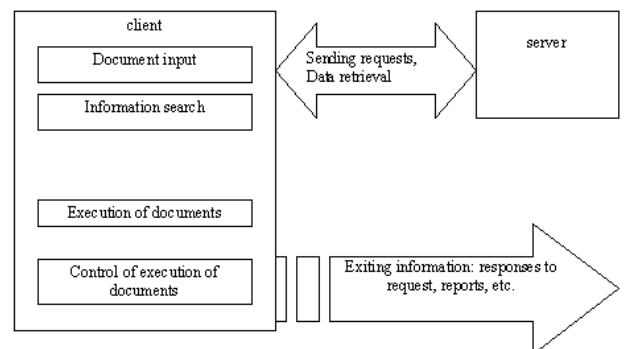


Fig.1. The scheme of functioning of the client of the Automated system of accounting and control of signaling devices

Let's take a closer look at these necessary program features. One of the main tasks of introducing electronic document management is the transition from paper documents to documents stored in a single database in electronic form. For this, the procedure for registering documents serves. Registration should be structured in such a way that the user can intuitively understand which fields are required and which are not. Therefore, it is necessary to do a programmatic check of filling in the fields. The necessary input fields when registering a document include:

– type of document (device replacement table, report, reference books);
– senior electromechanics responsible for the correct maintenance of documents;

- document executors (electricians);
- deadlines (deadlines for submitting documents to the technical department).

After filling in the required fields and confirming the registration of the document, these data must be saved in the database tables, and the document must be assigned a serial number in the system. After that, further work with the program continues.

For quick access to information stored in a single database of documents, a search procedure is required by various parameters. The main search parameters in the document management system include:

- registration date period;
- the person who registered the document;

These basic criteria allow you to get comprehensive information about the replacement of devices stored in the database and quickly find the desired device.

For the timely execution of documents and orders, as well as control of their execution, users specified when registering a document as controllers and executors should receive a notification of their appointment to these roles. These notifications should also be placed in the main program window and divided into different categories so that users can quickly notice the tasks intended for them and start performing.

As communication with the server, it is supposed to execute various named requests that it can recognize and process. Just like in the server program, it is supposed to develop a separate class for network communication between the client and the server. Here you need to take into account all the same request options as on the server (sending, receiving, sending and receiving) in order to organize a logical connection between these two programs.

To store the program data, you must use a relational database. In relational databases, all data is presented in the form of simple tables, divided into rows and columns, at the intersection of which the data is located. Queries on such tables return tables that themselves can become the subject of further queries. Each database can include several tables. Tables that refer to each other must have at least one column called the primary key. The rows in this column are unique. They cannot be repeated, cannot be empty, and these values allow separating one table row from any other. The use of a relational database is due to the fact that it allows you to save disk space, reduce the cost of writing data, easily manipulate individual data and logically split the entire set of information into parts. To split the data logically from the above, you should divide the base into these main tables:

- table of documents (stores numbers, dates of registration, execution);
- table of text messages (contains the name of the employee who replaced the devices (signaling system), statistics, time stamps, details of the devices (signaling system));
- users table (data on performers entered through the workflow server);
- tables of executors, controllers, and other service tables.

Before starting the system for the first time, you need to recreate the specified table structure in the database and fill it with the initial values necessary for the normal operation of the program. This process should be automated and performed through the document management server by the administrator.

Automated system of accounting and control of signaling devices.

Type of software for the automated accounting and control system for signaling devices

Client part of the executive system

The client program is a very important link in this project. It plays the role of a means of input, output, search and grouping of information. It is with this program that users work, it is she who should be the result of design thought; simple, attractive and also ergonomic.

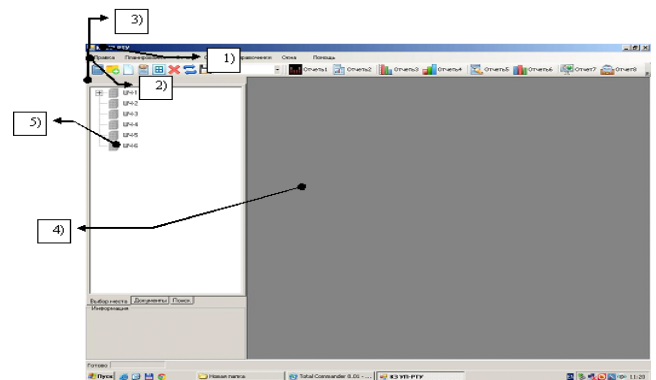Let's take a closer look at the main window of the program, which is shown in Fig. 2



Fig. 2. Main program window

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This window is logically divided into 5 parts: 1) the main window of the program, 2) the main menu of the program, 3) the toolbar, 4) the main field of the program and, finally, 5) the field for displaying devices (SCB), divided by categories.

**Tab selection window**
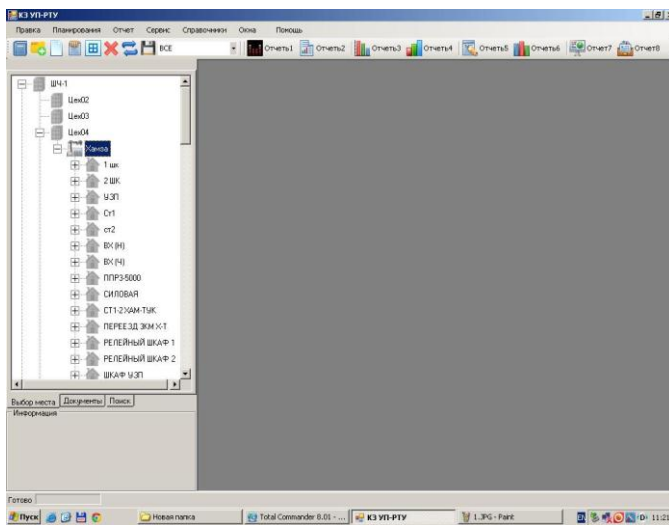
The tab selection window is shown in fig. 3



Fig. 3. Tab selection window

Here it is proposed to select one of the tabs on which the signaling devices are located.

Registration window for centralization and blocking alarms (STS)

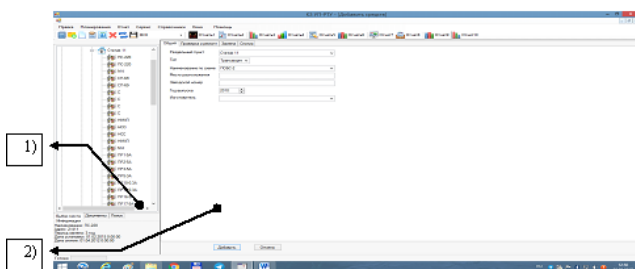The registration window for signaling devices is shown in Fig. nine



Fig. 4. Registration window for signaling devices

There are two tabs in this window:

The first is a tab for filling in the details and importing the document itself (1);

The second tab (2) - Serves for registering the order for the document. Consider the process of registering a document and order. The user creates a document in

MSWord, formats it, saves it. Then, entering this dialog box, he selects "Document type" (this field contains the main types of documents that are loaded from the database and can be easily changed), enters the due date, supervisors and performers for the document, as well as the internal document number, if it is present in the organization, in the corresponding fields of the same name. Selection of controllers and executors. Window for selecting executors and responsible

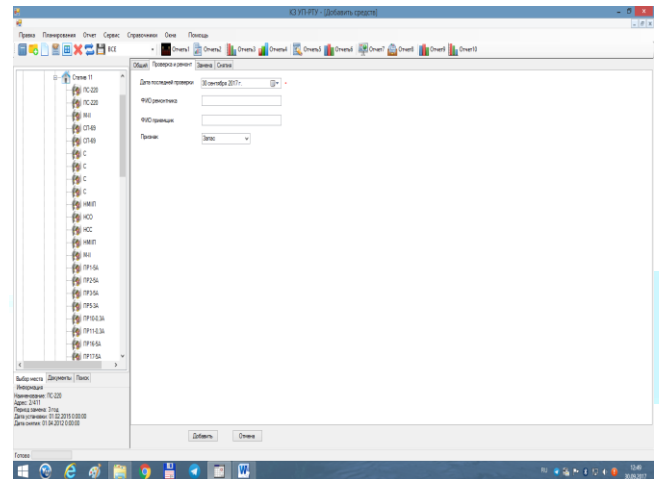The window for selecting performers is shown in Fig. 5



**Fig. 5. Window for selecting performers and responsible**

Here also, by double-clicking the left mouse button on the user, you can view all the detailed data about him.

**Registration of devices (SCB)**

The devices registration selection window is shown in Fig. 6

INTERNATIONAL JOURNAL ON ORANGE TECHNOLOGIES
www.journalsresearchparks.org/index.php/IJOT    e- ISSN: 2615-8140|p-ISSN: 2615-7071
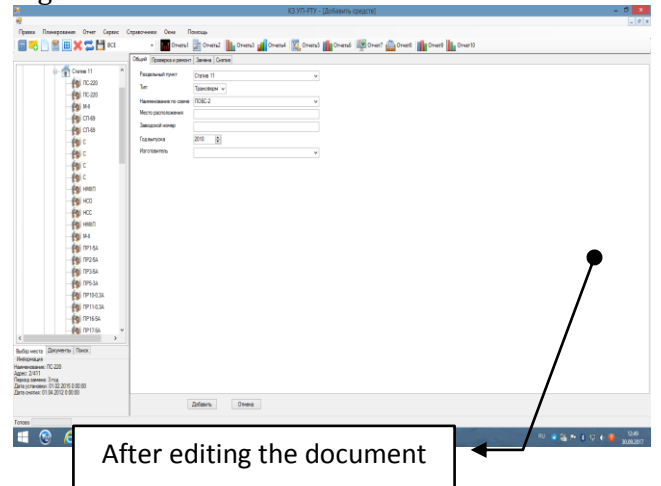
Volume: 03 Issue: 01 | January 2021

Fig.6. Window for selecting executors and responsible

After filling in these data (or at any other time), you need to upload the required document to our program. To do this, the user clicks the "Import Word Document" button and selects his saved document in the file system. Now the program is ready to write the document to the database, and the registration dialog looks like this:

Registration of devices is carried out in several stages. The required fields are filled in. After that, the device is added to a specially specified department (tab).

The performers, in turn, receive a message in the "Orders" tab, which is located above.

Device Replacement Information (SSC)

Search results bookmark

Here you can also see the document itself, its registrar, executors, controllers, etc.
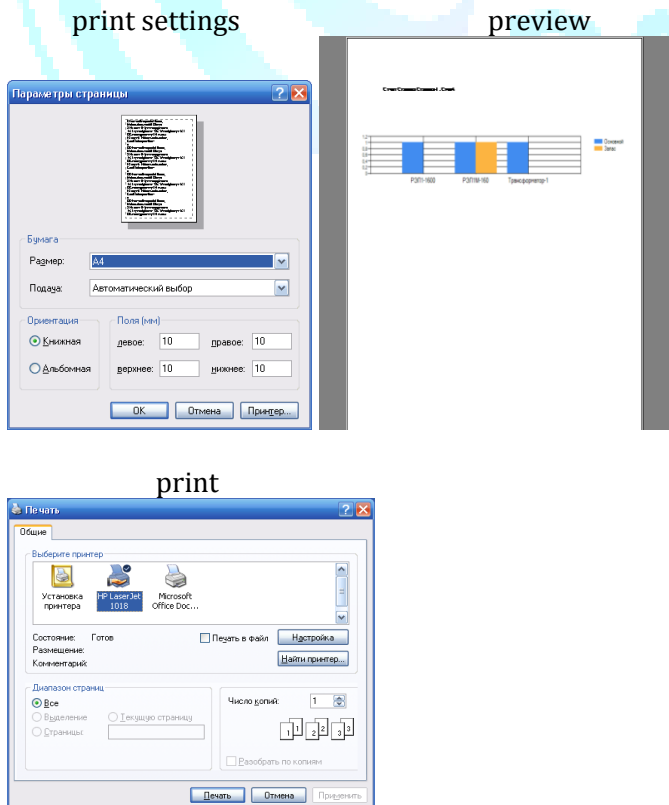
It is worth paying attention to two more features of this program:

printing the data display field;

cleaning temporary files.

Printing is performed by clicking the menu items "Document -> Print Settings; Preview; Print ".

Figure: 7

print settings                          preview



print



This section shows a graph report that you can print. This concludes the overview of the main functions implemented in this program.

System requirements

This software product uses a Just-in-time compiler to execute the program code. This imposes restrictions on system requirements, as it significantly loads the processor with additional code processing.

For the program to work, you need an operating system of the Windows family (the program was tested on Windows 2000, WindowsXP, WindowsVista) or any other that supports .NetFramework 2.0, and you also need MSOffice 2003 to work with Word.

Minimum system requirements: processor with a clock frequency of 300 MHz, 64 MB of RAM, and 2 MB of free hard disk space to store the installed program. Recommended system requirements: a separate server for storing the database, an application server that will store the server part of the program, client computers with a processor frequency of 1000 MHz, 512 MB of RAM, 500 MB of free hard disk space for storing temporary documents.

Testing

Testing was carried out by a group of employees of the Institute and Shch 1. Several typical tasks were carried out to test the program.

Checking the operability of the server program includes launching it on various operating systems of the MSWindows 98 - WindowsVista family with the preinstalled Framework version 2. Various options for the operation of the main system components (server program, client program and database) on one computer have been successfully tested, and also on different machines in all possible combinations.

The client program has also successfully passed the launch procedure on the above platforms. To check the correctness of the document flow process in the program, several tests were developed:

multiple client connections to the server (50 clients were connected in different network nodes, while a serious slowdown in the exchange of requests was not noticed);

registration of a document without an order and with an order to one or several controllers with performers (all documents went to the necessary controllers, and orders to performers);

search for all possible details (all required documents that meet the request criteria were issued);

cleaning of temporary files on the client computer using tools built into the client program (files were

deleted in the normal mode, the deletion of files occupied by the system was postponed);

document printing (all required documents were printed in accordance with the requirements on all installed printers in the system);

During testing, no serious errors were identified. Possible internal failures of the MSWord program have been noticed during the document registration process, which do not depend on the client program, based on the shortcomings of the COM interface. Also, possible failures of recording large documents into the database were registered. This is due to the internal configuration of the database server and is addressed by increasing the maximum write burst size.

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