ELMA BPM Platform

User Manual

Business Process and Performance Management System

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Introduction

This book is intended for users who want to master **ELMA BPM** on their own and for professionals who plan to implement **ELMA**. It is a tutorial rather than a reference guide and it contains enough information to give a basic understanding of the system. This book also describes main **ELMA** functions and settings and allows users to get started with **ELMA** easily.

Below is the list of quick-start manuals:

- Quick Start of **ELMA Web Portal**
- Quick Start of **ELMA ECM+**
- Quick Start of **ELMA Projects+**
- Quick Start of **ELMA KPI**

It introduces the reader to the main settings and functions of **ELMA** and allows getting started with **ELMA BPM**.

Brief Review of ELMA Architecture

ELMA consists of the following applications:

- **ELMA Server** (applications server)
- **ELMA Designer**
- **External applications**

See the system architecture in the Fig. 1.

ELMA Server (applications server) provides communication between the following **ELMA** components:

- **Databases**
- **Web Applications**
- **File Server**, etc.

ELMA Server is the root element of the system. Register your server before starting it.

ELMA Designer is an application with a simple and user-friendly interface used to develop process models, describe a company's organizational structure and create configurations. You install **ELMA Designer** on your PC.

You can also use **ELMA Designer** for a number of other tasks. You need to register your **ELMA Designer** before starting it.

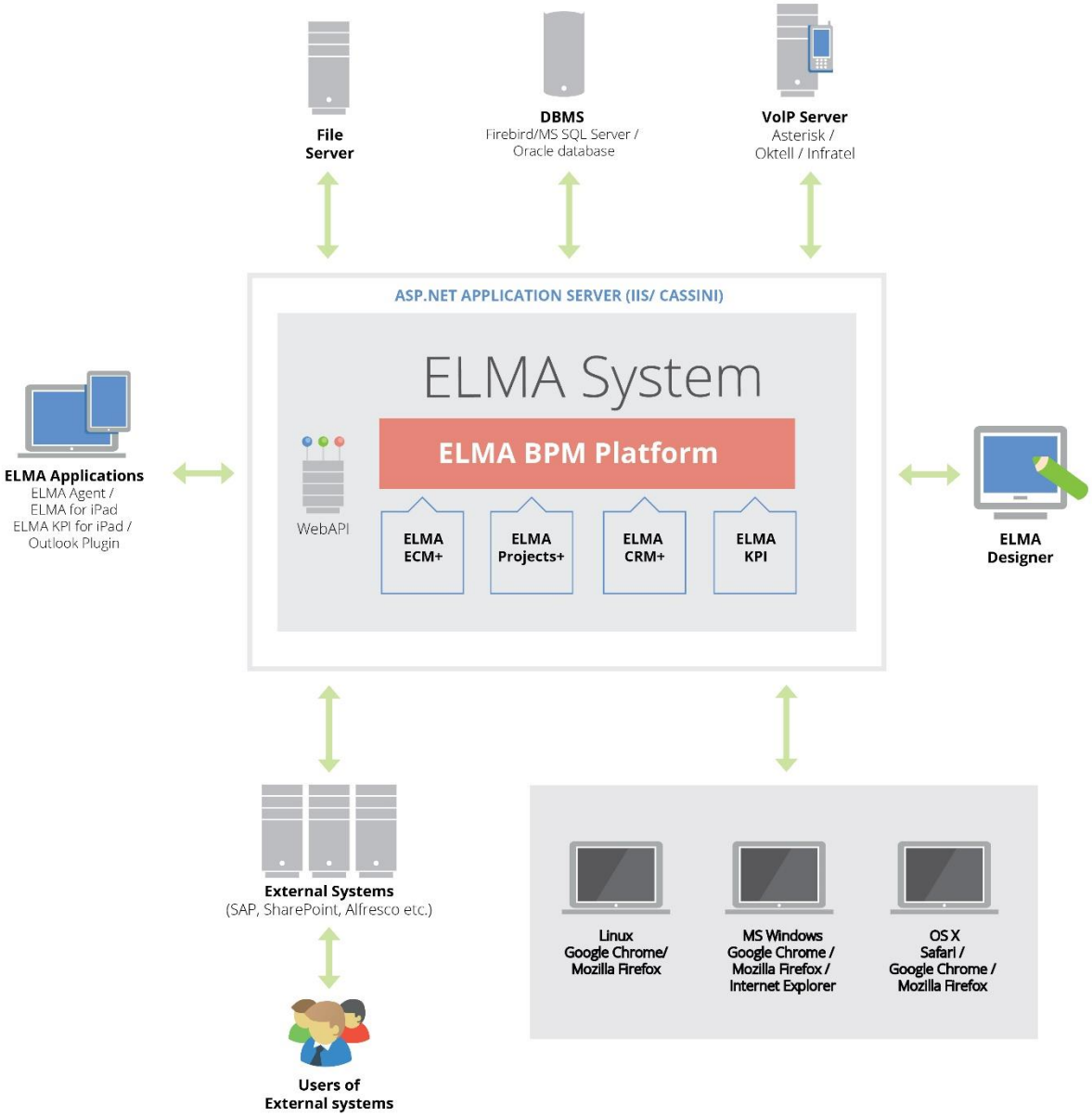


Fig. 1. ELMA architecture

Chapter 1. Installing System

This chapter describes how to install and register **ELMA** step-by-step. Before you start working with **ELMA,** you must install and register it. Please, contact our manager to get the link to the software installation package.

1.1. Installing Server and ELMA Designer

ELMA is available in three editions: **Community, Standard** and **Enterprise**. The installation process is almost identical for each edition except for some minor differences. Depending on the type of **ELMA** edition one of the following DBMS can be used: PostgreSQL, Firebird, MS SQL Server, Oracle Database 10g or Oracle Database 11g.

To install **ELMA Server** and **ELMA Designer** use the same installation package. Install **ELMA Agent** separately on your PC.

To install ELMA follow the steps below:

Step 1. Starting the ELMA Setup Wizard

Run the **ELMA** installation package. The Setup Wizard will check your OS for the installed IIS server 7.0 or higher.

If the server is not yet installed you will be offered to install the embedded web server from the installation package.

If the installed IIS server 7.0 or higher is detected on your computer, the **ELMA** Setup Wizard will automatically go to the **Step 2**.

Step 2. Setup Wizard Welcome screen

The Setup Wizard Welcome screen opens. Click the **Next** button to continue. If possible, close all running applications before installing the system.

Step 3. License Agreement

Please read the license agreement. If you accept the terms and conditions, click **I accept the agreement** and then click **Next**.

Step 4. **Selecting directory**

In this step of the wizard, choose the **ELMA Server** installation directory. It is recommended to use the default directory. To change the default directory click **Browse** and specify the new path. Click the **Next** button to continue.

Step 5. Selecting components

Use the drop-down list at the top of the dialog box to select the system components you want to install. By default, the Setup Wizard will install both **ELMA Server** and **ELMA Designer**. Click **Next** to continue.

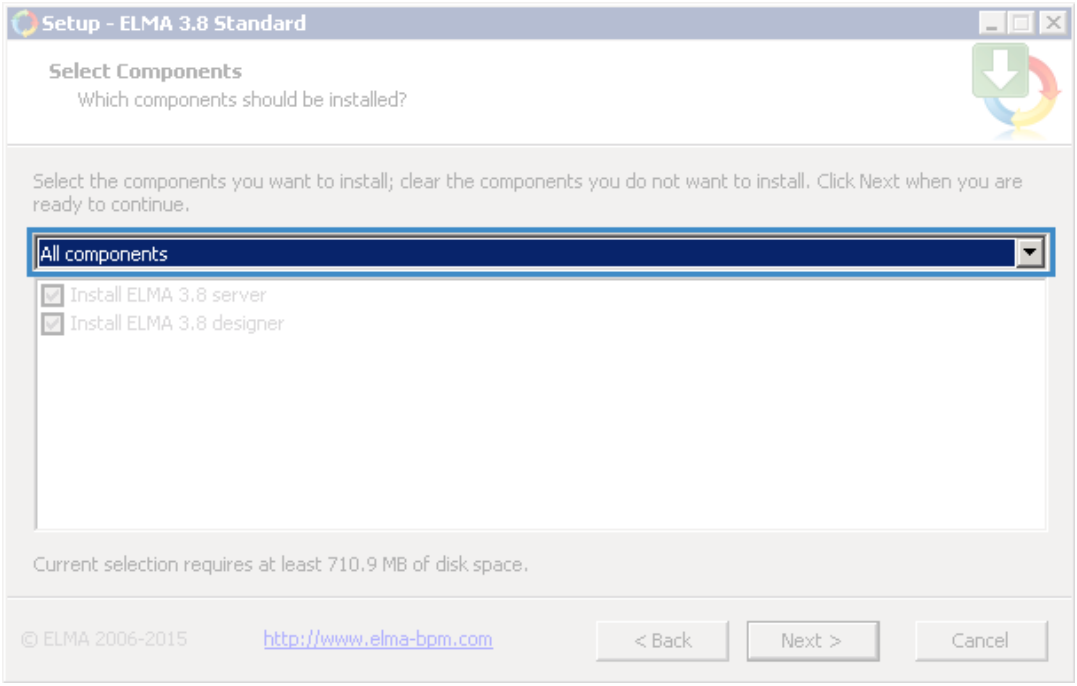


Fig. 2. Select Components dialog box

Step 6. Selecting configuration

Specify the location of the **ELMA** configuration files:

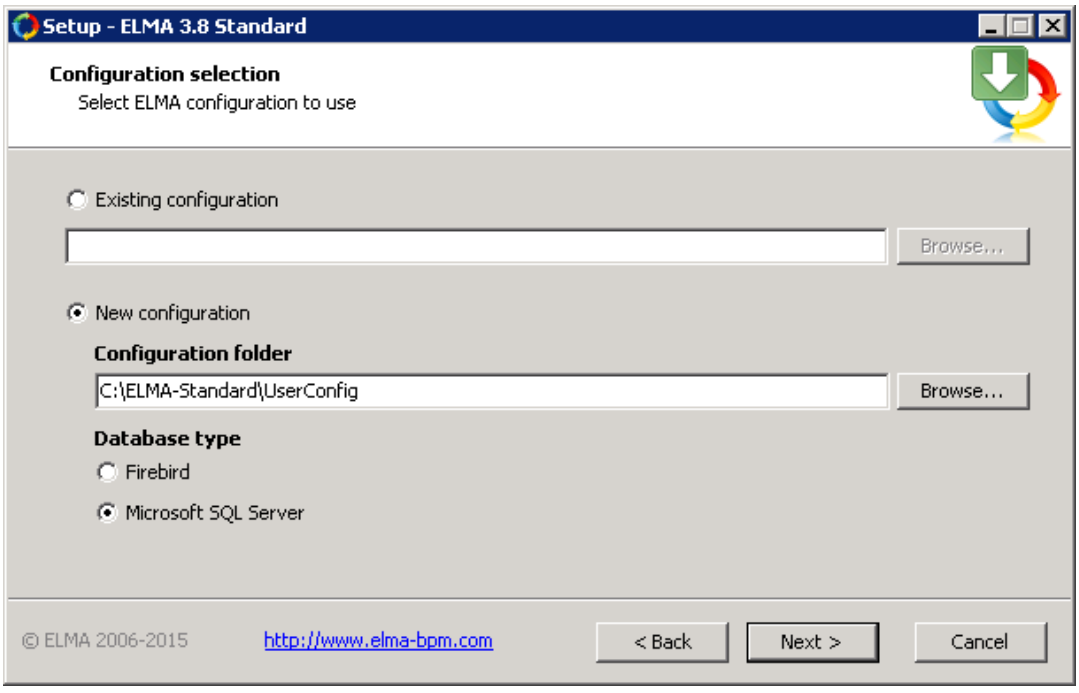


Fig. 3. Configuration Selection dialog box

Existing Configuration. To select the existing **ELMA** configuration, click **Browse** and specify the path to the configuration folder that contains the configuration file *configuration.config*.

New Configuration. To select a new **ELMA** configuration, click **Browse** and specify the path to the configuration folder that will contain **ELMA** configuration files. It is recommended to use the default **UserConfig** folder.

If you select **New configuration**, select the required DBMS in the **Database type** field. The list of available DBMS depends on the system edition:

- **ELMA Express** – PostgreSQL and Firebird;
- **ELMA Standard** – PostgreSQL, Firebird and Microsoft SQL Server;
- **ELMA Enterprise** – PostgreSQL, Firebird, Microsoft SQL Server and Oracle;
- **ELMA Community Edition** – PostgreSQL, Firebird and Microsoft SQL Server.

When installing **ELMA Standard** or **ELMA Enterprise**, in the **New Configuration** field you can specify the system's DBMS type: Firebird DBMS or Microsoft SQL Server - for **ELMA Standard**, and Firebird, Microsoft SQL Server or Oracle for **ELMA Enterprise** (Fig. 4). Click the **Next** button to continue.

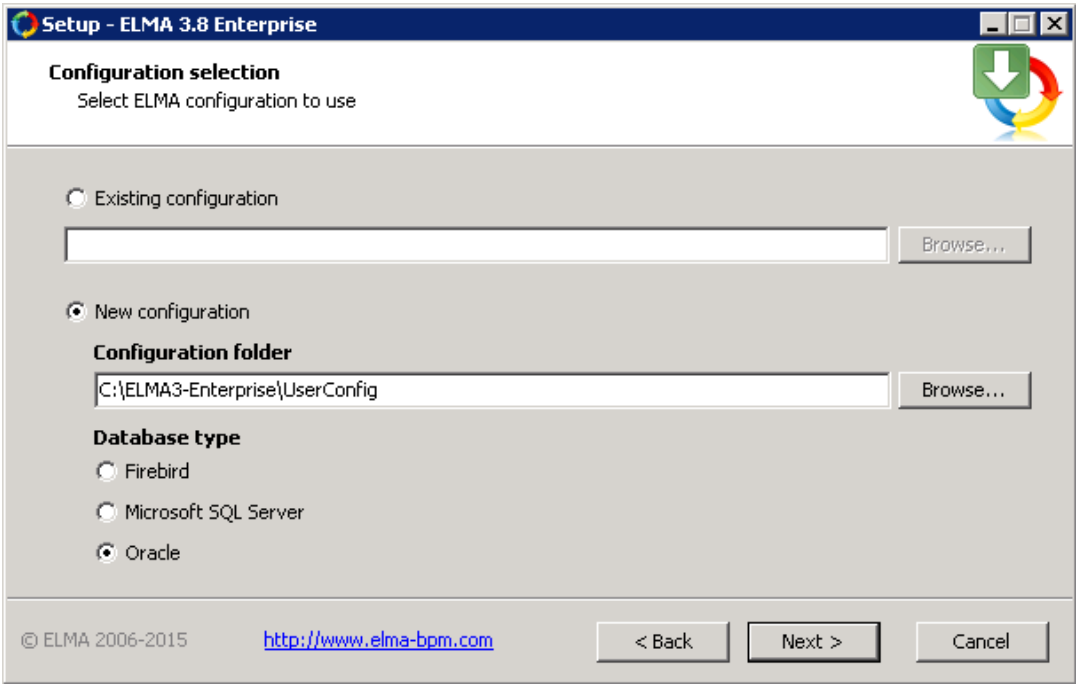
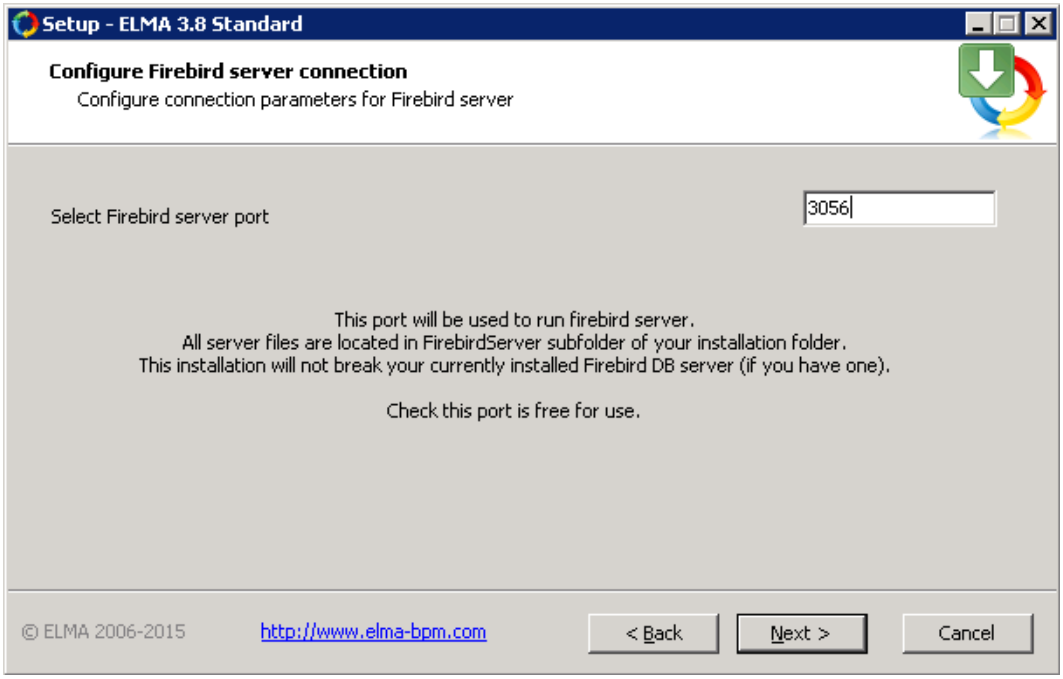


Fig. 4. Configuration Selection dialog box (ELMA Enterprise edition)

Step 7. Establishing connection to the DBMS server.

7.1. Firebird DBMS. To establish the connection between **ELMA Server** and **Firebird server** specify the port number in the **Select Firebird server port** field (Fig.5). It is recommended to use the default port number - 3056.



7.2. MS SQL Server. Fill in the required fields in the dialog box (Fig. 6) and click **Next** to continue.

Fig. 5. Configure Firebird Server Connection dialog box

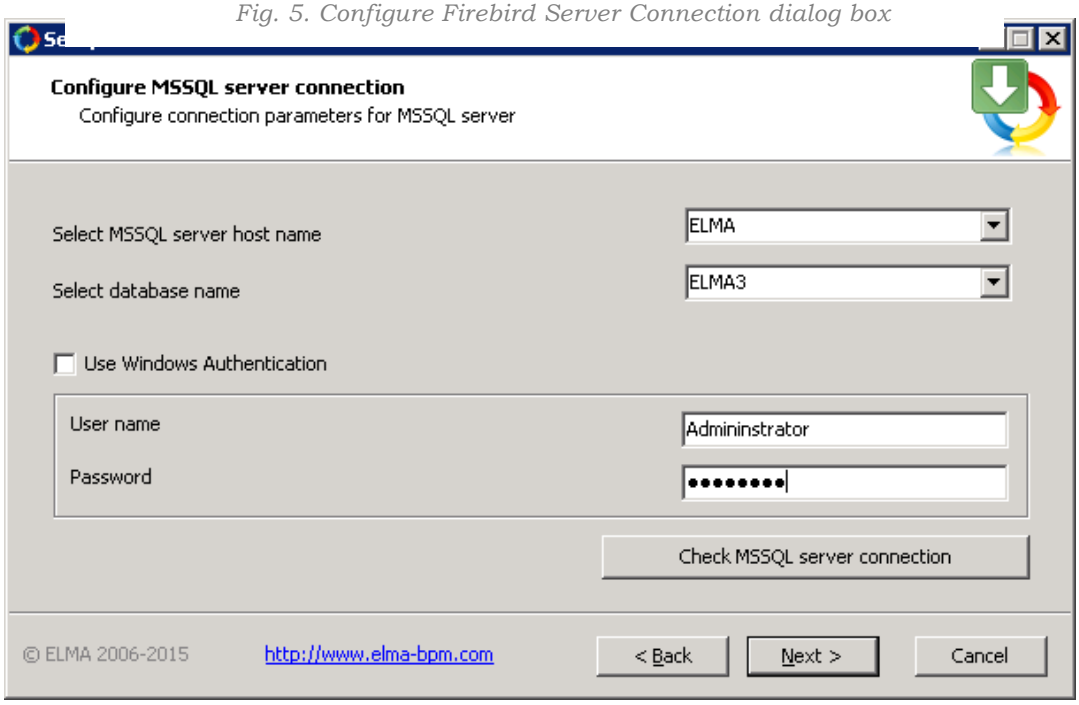


Fig. 6. Configure MS SQL Server Connection dialog box

After you have filled in all the fields, click **Check MSSQL server connection**. The system will attempt to connect to the server specified in the **Select MSSQL server host name** field. Then you will see a dialog box informing you that your test connection succeeded (Fig. 7).

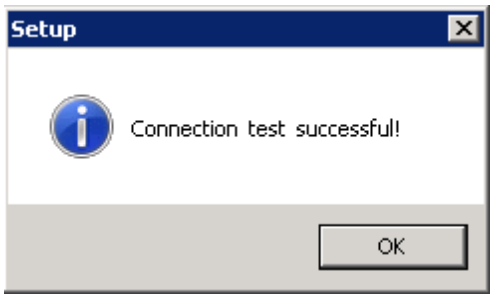


Fig. 7. MS SQL Server Connection Check dialog box

Step 8. Configuring the Web Server

In the dialog box that opens fill in the required fields (Fig. 8) and click **Next**.

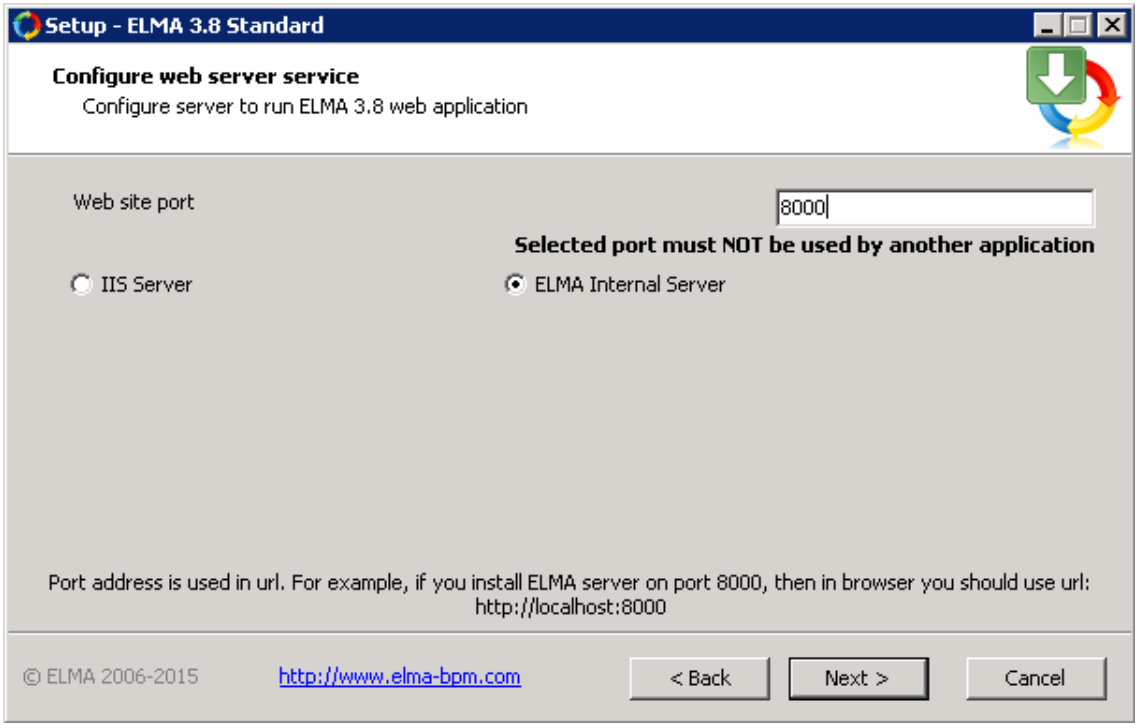


Fig. 8. Configuring web server parameters

Web Site Port is a port for connection to **ELMA Web Server.** The default port number is 8000. If this port is occupied, the system will display a relevant

notification. In this case, enter another port number instead of the default port number.

Then specify the type of the system web server: IIS server or ELMA Internal Server (Cassini web server) - by checking the relevant box.

If the IIS service is not available for your OS, the **IIS Server** box will be disabled.

If you select **IIS Server**, the additional fields will appear in this dialog box (Fig. 9).

Web Site Name is the name of ELMA Web Server in IIS service.

Web Application Pool is the name of the web application pool that will be created for **ELMA Web Server.**

Web Application Pool Identity is a name of the identity account that Web Application Pool uses to operate the **Web Application**.

It is recommended to use the **LocalSystem** identity - an account with the local admin permissions. It forms a part of the **Administrators** group on the web server.

Click **Next** to continue.

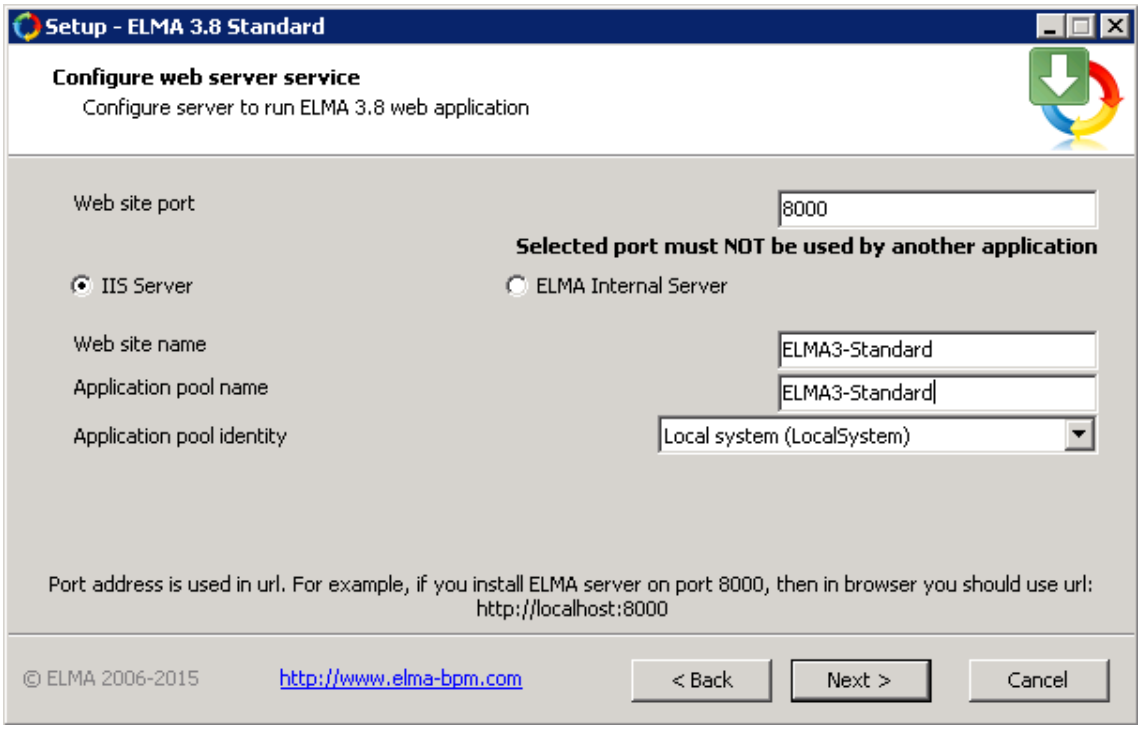


Fig. 9. Configuring web server dialog box → IIS Server switch

Step 9. Selecting Additional Options

To create shortcuts for quick launch of **ELMA Web Application** and **ELMA Designer** from Desktop check the box **Create a shortcut on user desktop.**

Step 10. Checking Selected Parameters

In this step, you can check the full list of the setup parameters specified before. If necessary, you can change these parameters by clicking **Back** and returning to one of the steps described above.

Click **Install** to start installation.

Step 11. Installation

In this step, Setup Wizard copies **ELMA** files and installs **ELMA** on the PC (Fig. 10). Please wait until the installation is complete, it may take a few minutes.

After copying all the files, Setup Wizard will automatically go to the next step.

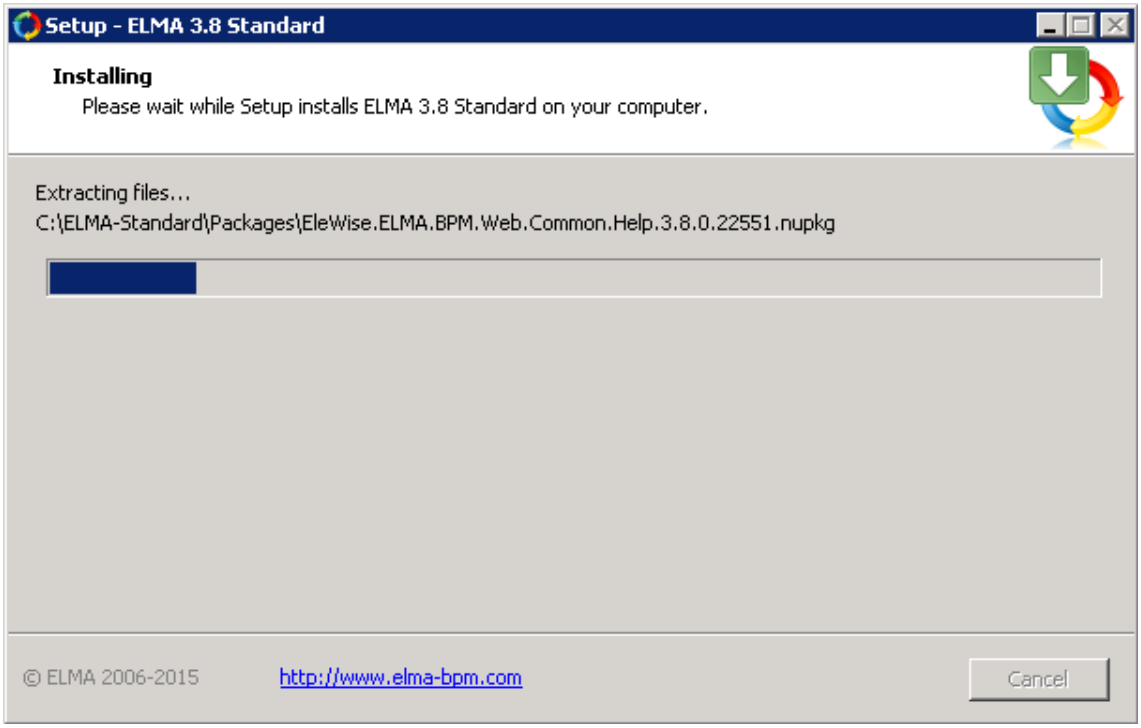


Fig. 10. Installation Progress dialog box

Step 12. Completing Installation

Now the dialog box appears informing you that the installation is complete. If you want to start **ELMA Designer** immediately after installation check the **Start Designer** box.

To complete the installation process, click **Finish**.

1.2. Verifying ELMA Server and ELMA Designer Installation

When starting **ELMA** for the first time, make sure that the server is installed properly and then activate the system. To check the functions of the installed server, open your web browser and enter the following in the address bar: http://localhost:<port_number> or http://127.0.0.1:<port_number>, where localhost - IP address of the computer where **ELMA** is installed; port address - the port number specified in the **Step 7** of the System Setup Wizard (by default - 8000). The system supports the following browsers: Internet Explorer, Mozilla Firefox and Google Chrome.

You can observe the server start progress on the current browser page (Fig. 11).

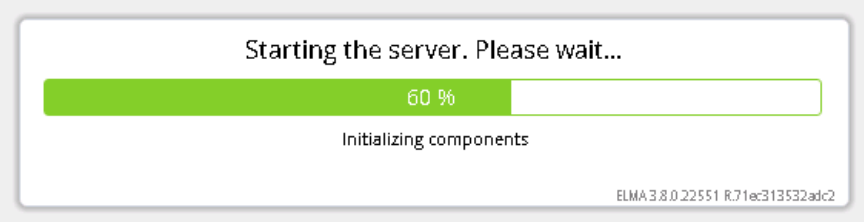


Fig. 11. Server Start Progress

Initial **ELMA** start-up can take a long time. Then the product registration window will open in your browser.

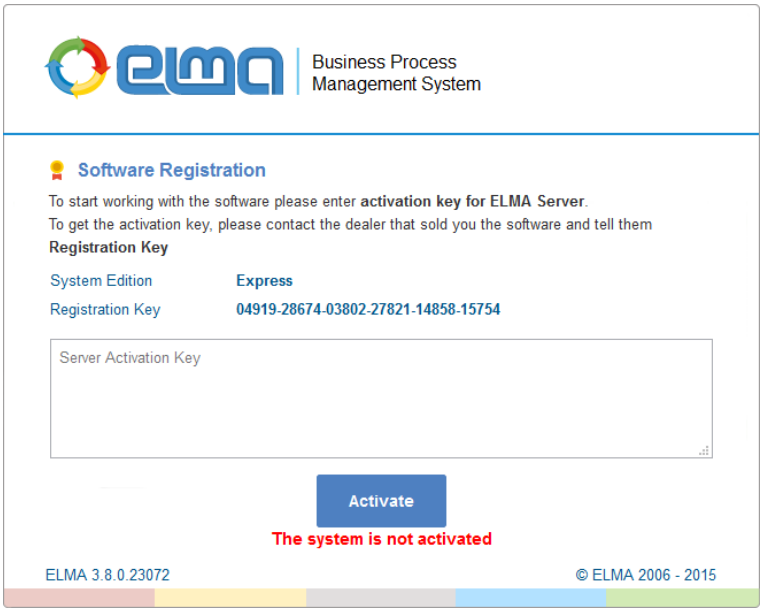


Fig. 12. Product Registration Window

Find the description of further steps in the next chapter "*Getting started with ELMA*".

Chapter 2. Getting started with ELMA

The first chapter describes how to install **ELMA**. This chapter focuses on how to get started with **ELMA**.

2.1 Getting Started with Server

After you have installed ELMA, one of the following folders will appear in the Start menu depending on the ELMA edition: **ELMA Community**, **ELMA Standard** or **ELMA Enterprise**. Open this folder to start the required ELMA component. The folder contents (Fig. 13):

- **ELMA Designer.** Start **ELMA Designer** to describe the company's organizational structure, design business process models, configure document flow and document management setting
- **Open ELMA in your browser.** Open **ELMA Web Application** in your browser for further operations.
- **Uninstall ELMA.** If for some reason you want to uninstall **ELMA**, choose this option in the menu.

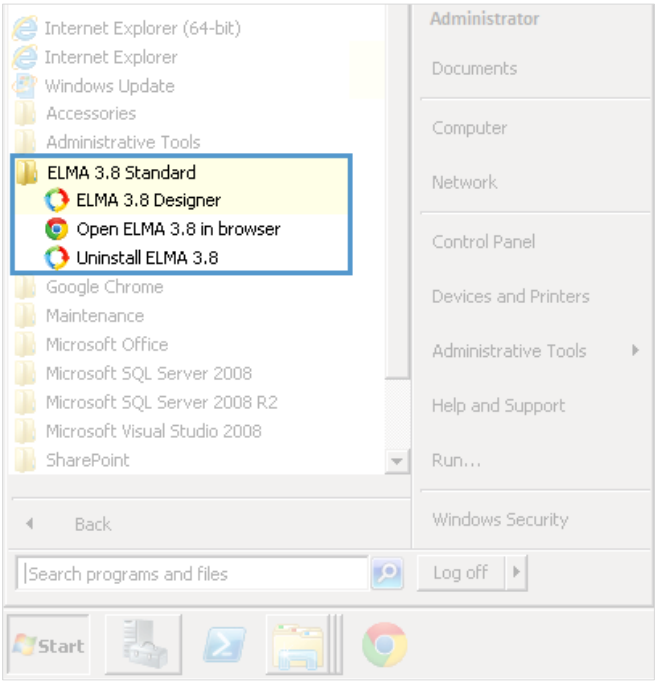


Fig. 13. ELMA components shortcuts in the Start menu

The components shortcuts will also be available on your desktop if in the **Step 9 of ELMA** Setup Wizard you have selected **Create a shortcut on user desktop**.

2.2 Registering the Application

To get started with **ELMA Server** and **ELMA Designer** you must register them. You cannot use unregistered system components. The system registration procedure is also known as system activation.

Normally, you must register **ELMA Server** only once – the first time you start it. You must register **ELMA Designer** individually on each computer. If any of **ELMA** components have been activated on your computer previously, you do not have to activate other components individually. E.g., if you have already registered **ELMA Server** on your PC, registration of **ELMA Designer** on this computer is not required.

When you start a non-registered component for the first time, the product registration window appears (Fig. 14). Enter your activation key in the respective field.

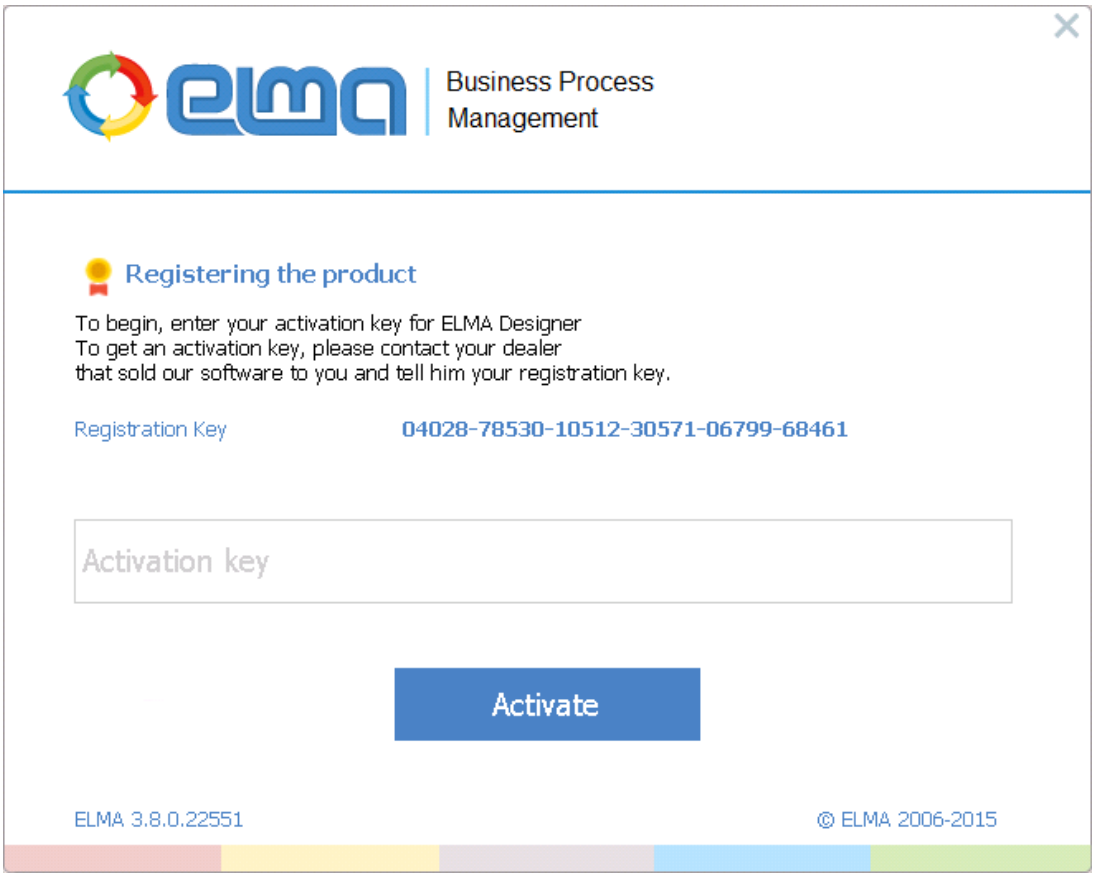


Fig. 14. ELMA Registration Window

In the following paragraphs, you will find out how to register **ELMA Server** and **ELMA Designer**.

2.2.1. Registering ELMA Server

You can register **ELMA Server** in the system's Web Application. Simply open it in your browser and the registration window will appear automatically.

In the product registration window, you will see your registration key. Contact your dealer company where you purchased the software and tell them **ELMA Server** registration key. In response, they will send your product activation key. Enter the activation key in the respective field and click **Activate**.

If you bought the software directly from **ELMA** company, please call **+ (352) 20-30-11-40** to activate your product or contact a manager of your supplier company.

If you have already activated **ELMA Designer** that forms a part of the system installed on this PC, you do not have to activate **ELMA Server** individually.

If the registration is successful, the authorization window will open. When you sign in for the first time, use the *admin* login. By default, the password is not required for the Administrator account. After authorization, the main page of **ELMA Web Portal** will open (Fig. 15).

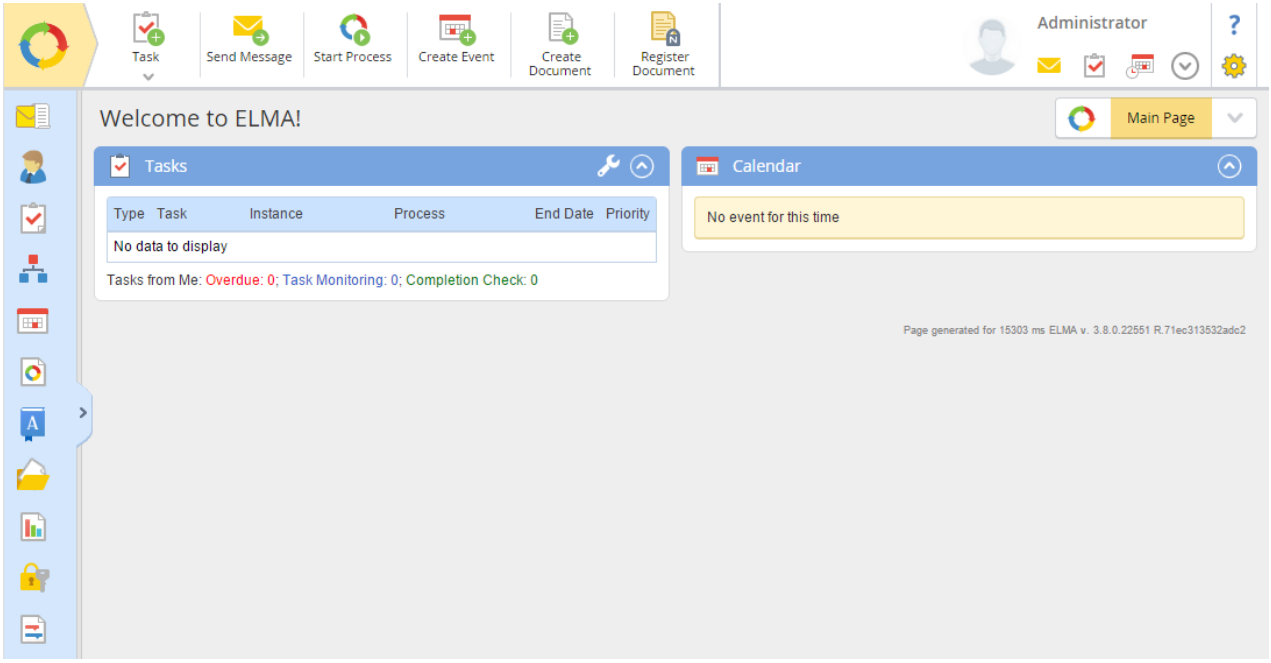


Fig. 15. ELMA Main Page (first start)

2.2.2. Registering ELMA Designer

To get started with **ELMA Designer** you have to register it as well (unless you have already activated **ELMA Server** on this computer). When you start a non-registered **ELMA Designer**, a window will open. In this window, you will see the registration key and the field for **ELMA Designer**'s activation key.

This window also provides contact information you need to get the keys. Contact your dealer company where you purchased the software and tell them the registration key. In response, they will send your product activation key. Enter the activation key in the respective field and click **Activate**. If the keys are correct, you will be able to access the system.

2.3 Connecting to ELMA Server and Specifying Configuration

Now **ELMA** is almost ready to use. Before you start, you need to connect to the server and specify the configuration that describes the structure of your company's activities.

To specify the server configuration use **ELMA Designer**.

Start **ELMA Designer.** The window will open. In the right corner of the **ELMA Designer** start window, below the **Current Configurations** button, you will see the list of all available configurations.

In the **ELMA Designer** start window, you can create a new server configuration or select one of the existing configurations.

Your company's configuration is located on **ELMA Server**. To connect to this configuration, please follow the steps below:

Step 1.

In the **ELMA Designer** start window, click **To the list of configurations**, and then click **Add Configuration** (Fig. 16).

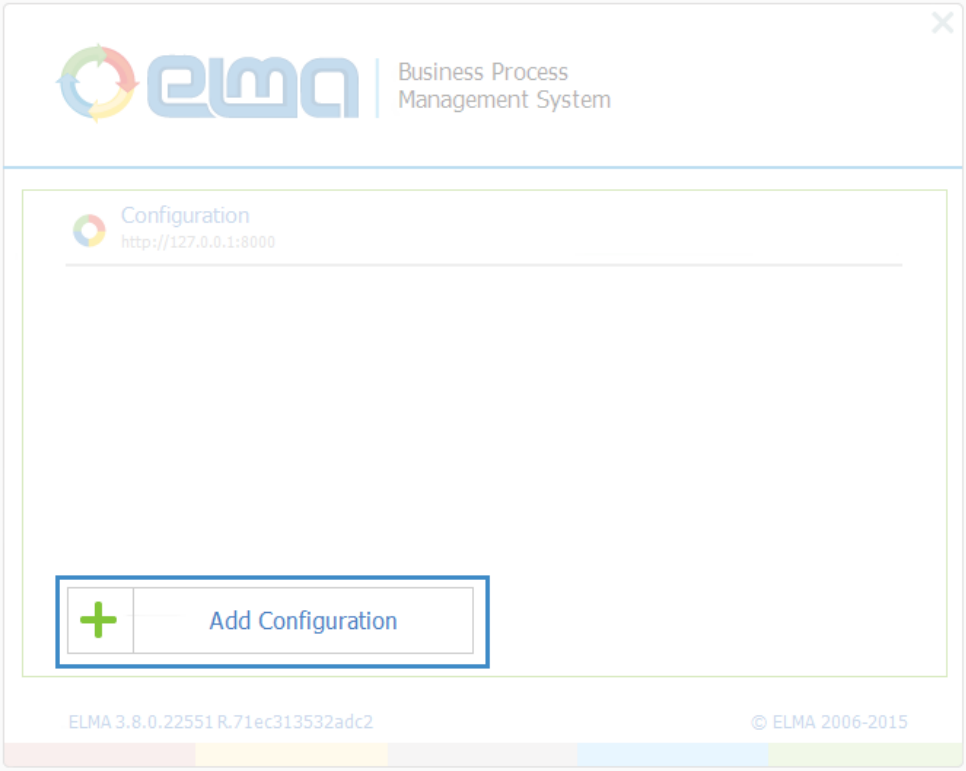


Fig. 16. ELMA Designer start window → Create Configuration link

Step 2.

In a dialog box that opens fill in the required fields (Fig. 17) and click **Next**.

In the **Configuration name** field, specify your company's name. The default **Configuration type** is Remote.

In the **Server Address** field, specify the address of the server that hosts **ELMA Server**. Server address format: http://SERVER_NAME:SERVER_PORT/.E.g.: http://ServerName:8000/. The default port number is 8000, however the Administrator can change it when installing or using the system.

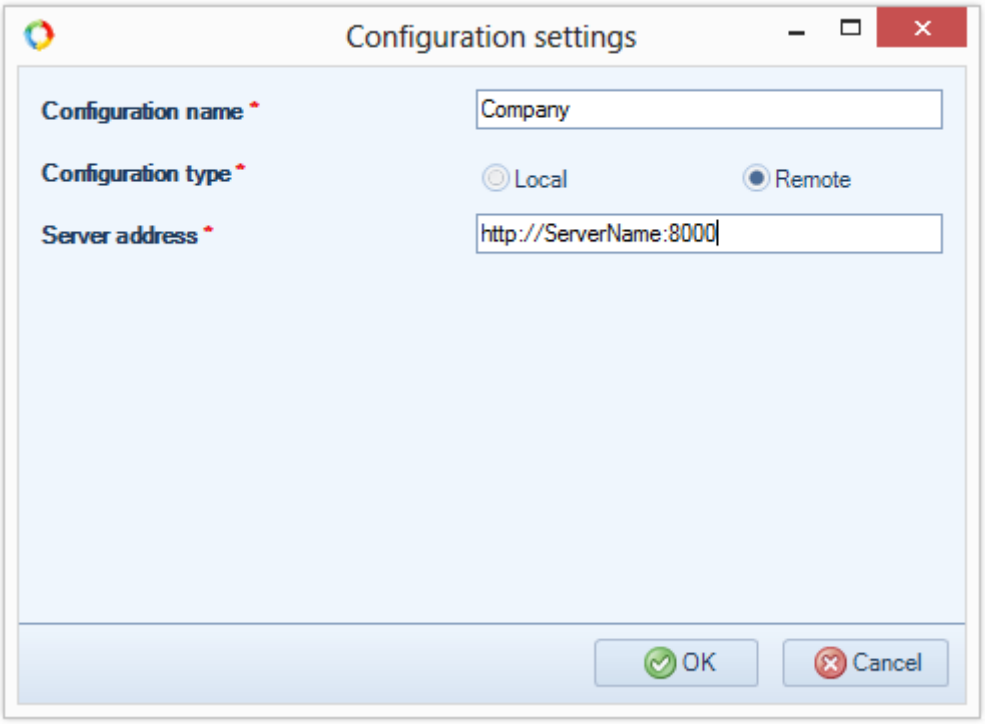


Fig. 17. Adding a remote configuration

Click **OK** to save your settings. Your configuration will appear in the configuration list.

Step 3.

Click on the configuration name in the right part of the **ELMA Designer** start window - the login/password window will open.

By default, you can sign in as *admin*. Password is not required. Click **OK**.

By default, **ELMA Designer** uses the 7100 port to connect to the remote configuration. Make sure that the server hosting **ELMA** has a rule that allows incoming connections to this port.

After you have signed in you can start working with the system. Learn more about the initial system setup in **Chapter 4.**

Chapter 3. Getting Started with Web Application

This chapter describes the main interface elements of **ELMA Web Application** and explains how to work with them.

A user who has a good understanding of the interface will easily master the rest of the system. Since users spend most of their time in **ELMA Web Application** when working with ELMA, they should read this chapter carefully.

3.1 Main Page

The main page is a start page of **ELMA Web Portal**. It opens immediately after you sign in or click the main menu button (Fig. 18, number 1). In the upper right corner of the page, you will see a set of main pages that provide quick access to frequently used information.

It is recommended to get started with **ELMA Web Application** by browsing the main page. The main page contains **ELMA** navigation elements and controls. Every user can customize their personal main page display.

Structure of Main Page

The main page contains four menus. See an example of the main page in Fig. 18.

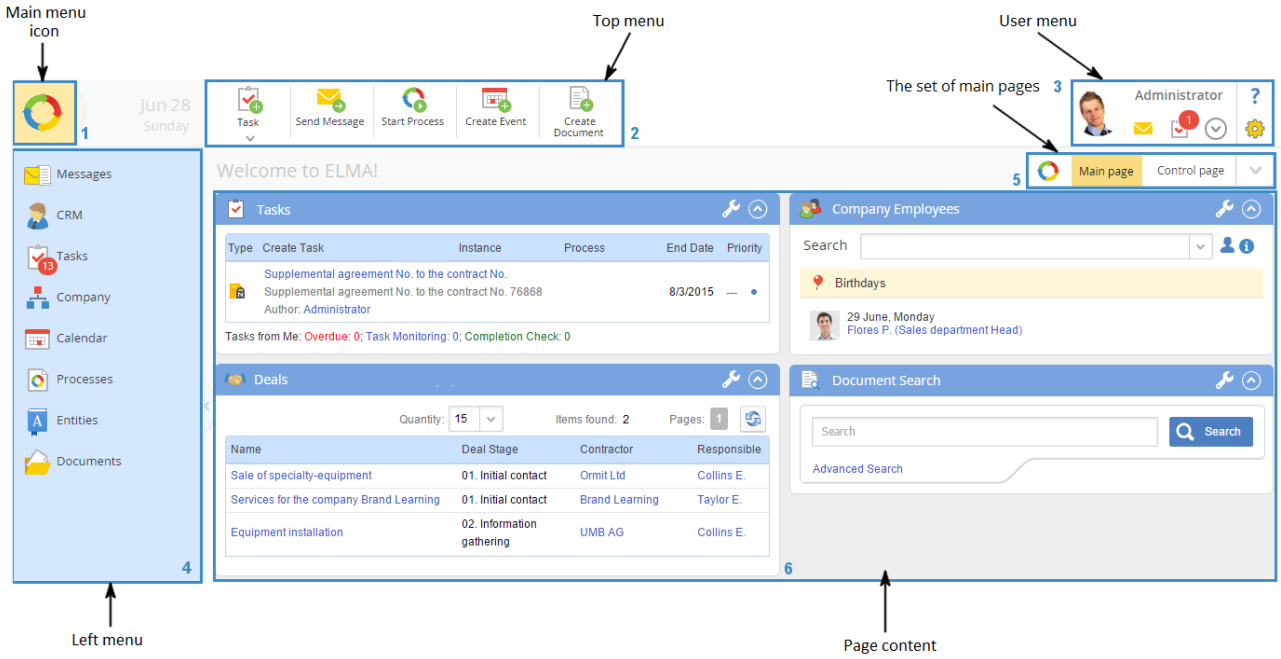


Fig. 18. Main page of ELMA web application

1. Main menu

Provides quick access to **ELMA** main activities and allows you to browse different sections.

2. Top menu

Provides quick access to tasks, events, documents, allowing you to create and send messages and start processes. Fig. 18 shows the standard top menu (configurable). The display of the top menu changes depending on the portal page and user access permissions.

3. User menu

Shows the unread messages and new tasks. Use this menu to open the user's profile or to sing out.

4. Left menu

Provides quick access to **ELMA** sections. Here you can see a list of all the **ELMA Web Application** sections available to you. The content of this menu depends on **ELMA** configuration, the menu settings and the current user's permissions. While you are working with **ELMA**, the display of the menu items change. The current menu section is highlighted yellow and you can always find a link to the main page in the first line of the side menu.

To the right of the user menu there are two buttons: **Customize Main Page** and **Help**.

– **Customize Main Page**. Click this button to choose portlets and set their location on the page as well as to configure them.

– **Help**. Click this button to open the help page containg detailed information about the currently open section.

5. Set of Main Pages

You can create several main pages. Each main page can contain different sets of portlets. E.g., the first main page of the system is set up for document management, the second is for project management and the third is for your subordinate employees control, etc. The system users and the administrator can create and configure main pages; it is also possible to customize main pages for specific user's needs.

The set of main pages contains all the main pages available to you. To go to a page you must click on its name.

The users permitted to configure the set of main pages can see the list button next to the page name.

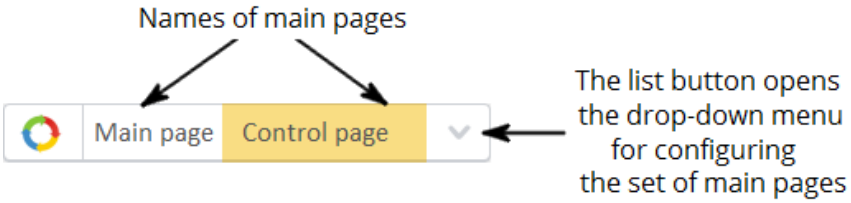


Fig. 19. Drop-down menu for configuring the set of main page

6. Page Content

This area contains your most frequently used portlets.

A portlet is a plug-in component of the user interface of **ELMA Web Application**. A portlet shows specific up-to-date information. To arrange portlets click **Page Settings** in the top right corner of the window near the user menu.

ELMA offers many standard portlets; you can create your own portlets as well. You can easily configure the content and location of the main page portlets.

The rest of the pages of **ELMA Web Application** differ from the main page mostly in terms of the page content and dashboards. In other ways, their interfaces are similar.

3.2 System Menu

This section describes in detail all the above-mentioned **ELMA** menus.

Main Menu

Use this menu to:

- create the main system activities (tasks, messages, documents etc.) and start processes;
- quickly go to any main section or subsection of the system.

To open the main menu move your mouse pointer over the **ELMA** logo in the top-left corner of the main page and wait until the blue button appears. This button opens the main menu (Fig. 20).

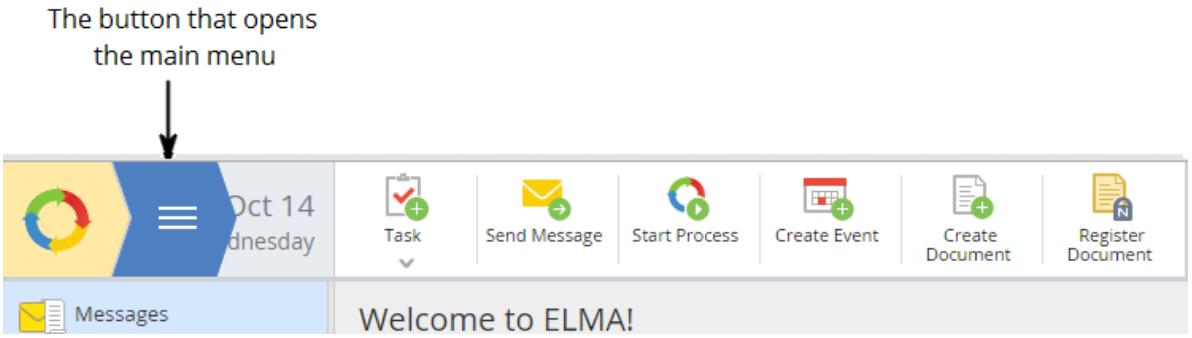


Fig. 20. The button that opens the main menu

Place the mouse pointer over the blue button - the system main menu will open (Fig. 21).

Fig. 21. ELMA main menu

If you want to hide the main menu click on the empty space on a dark gray background outside the main menu area.

When you place the mouse pointer over **Tasks**, **Documents**, **CRM** etc., the subsections' buttons appear. Use these buttons to go to the subsections of current section. E.g., in Fig. 30, the pointer is over **Tasks**. To go to the selected subsection, move the cursor to it and click.

Top Menu

Provides quick access to the functions of **ELMA** elements and contains the user menu. The **Top Menu** is also known as a toolbar. The top menu buttons change depending on the page you are currently browsing. You can show/hide the top menu buttons by editing the interface (see Chapter 6).

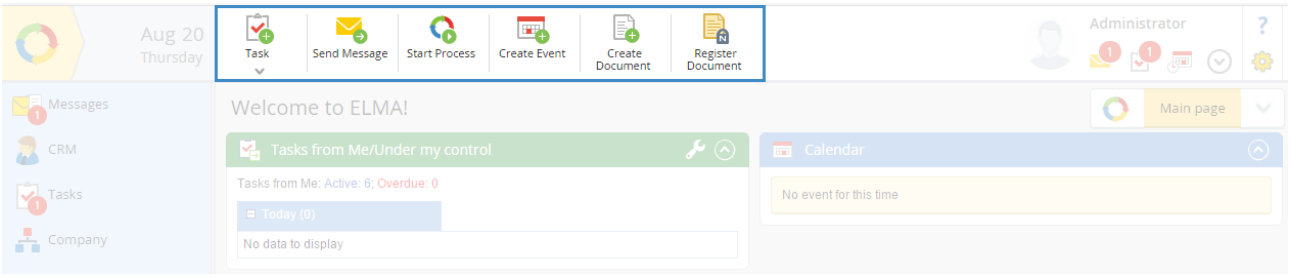


Fig. 22. Top Menu of Main Page

User Menu

User Menu forms a part of the **Top Menu**. If you want to expand the **User Menu**, move the mouse pointer over the list button and click. The expanded **User Menu** has two available items:

- **Profile.** Click on this item to open the user's profile page. On the profile page, you can change user's personal data, control trusted devices and select other options.
- **Log Out.** Log out and sign in using a different account.

Fig. 23. Collapsed user menu

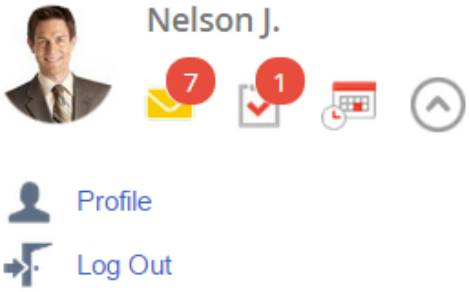


Fig. 24. Expanded user menu

Left Menu

Provides quick access to **ELMA** sections.

You can adjust the size of the **Left Menu.** To do this simply drag the edge of the menu with the mouse to the desired location. If you are not using the left menu, save the screen space and just collapse it (Fig. 25). To do this click on the arrow button on the right side of the menu. If you want to expand the menu, click the same button once again.

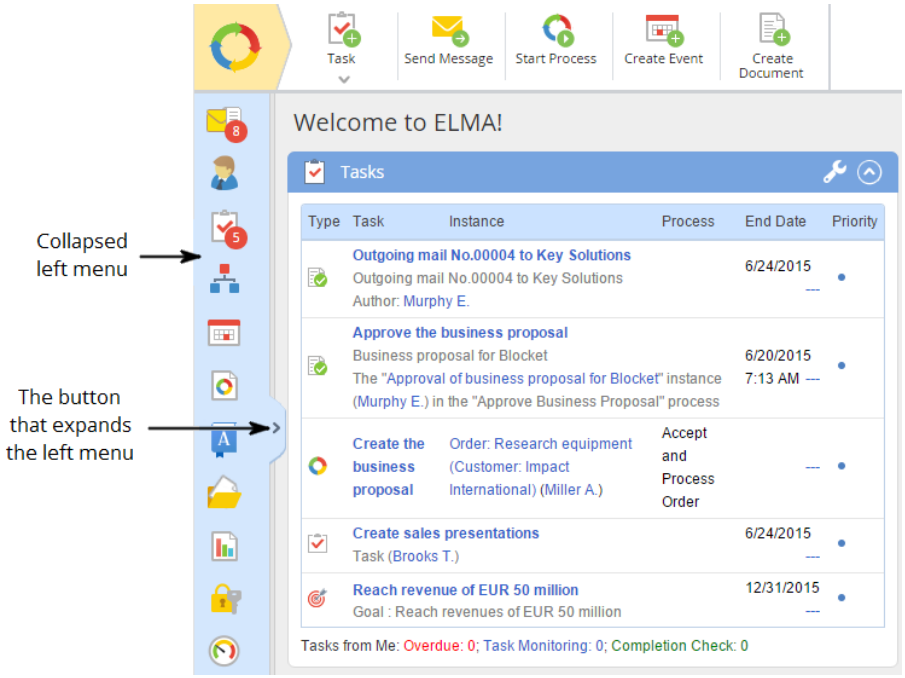


Fig. 25. Collapsed left menu

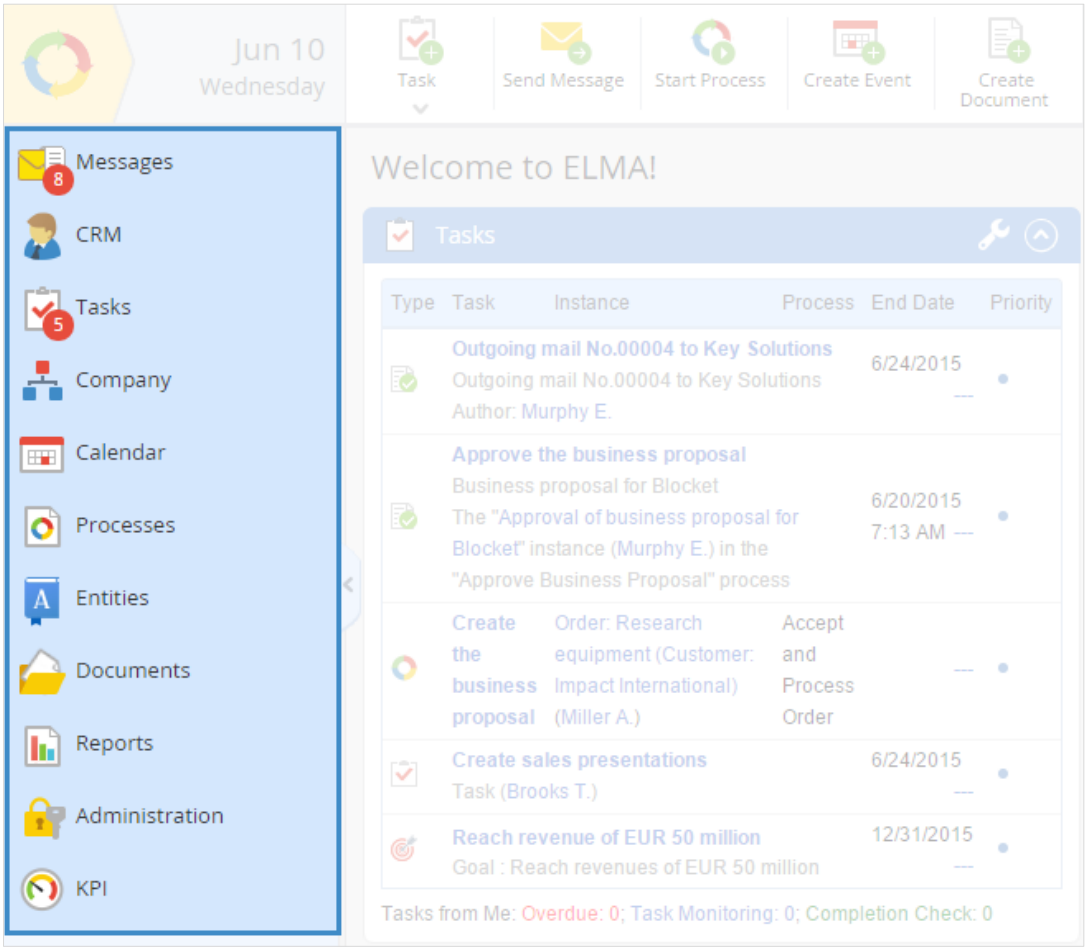


Fig. 26. Expanded left menu

3.3 Portlets

A portlet is a plug-in component of the user interface of **ELMA Web Application**. The portlet shows specific up-to-date information.

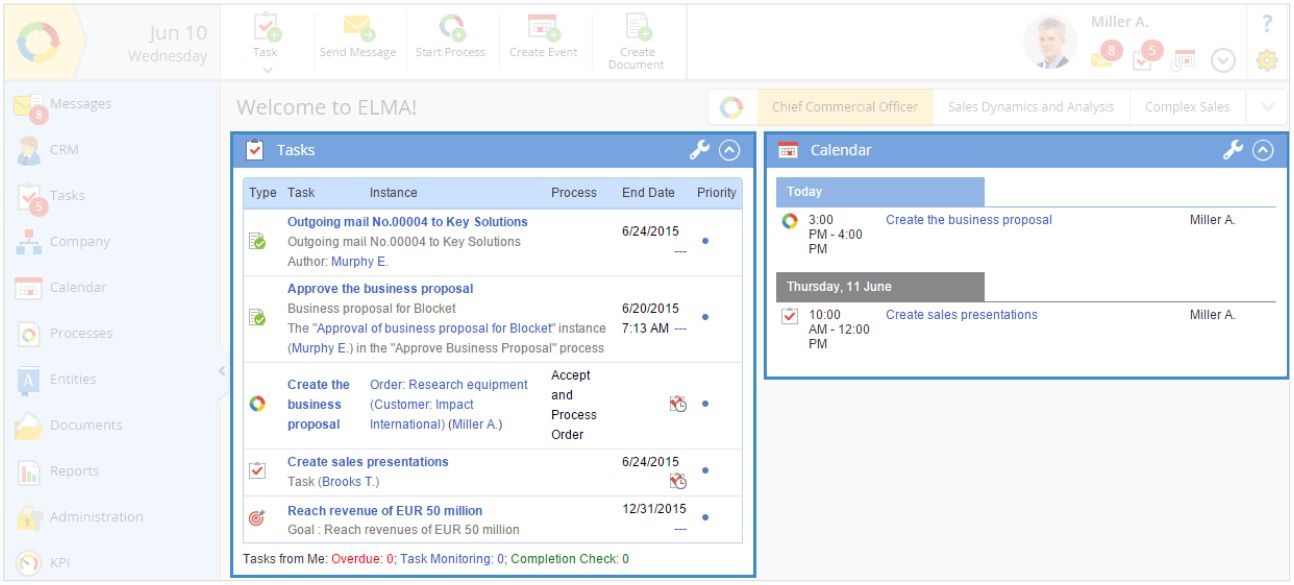


Fig. 27. Main page portlets

You can add and customize portlets for each user according to their needs. The portlets are displayed on the main pages of **ELMA Web Application**. You can change the set of portlets and their location when configuring the page settings. You can also change the content shown in the portlets when configuring the portlet settings. Learn more about the portlets in **Chapter 6**.

By default, the main page already contains a set of standard portlets. If you want, you can select another portlets and change their arrangement on the main page.

Learn how to create your own portlets in **ELMA Help**.

3.4 Messages

Messages is an important section of the **Web Application**. This section displays all the notifications on system events and changes as well as messages from the system users (e.g., created or edited tasks, documents, related comments, etc.).

When you create or edit documents, tasks, events, relationships, projects and other system elements, **ELMA** automatically sends system messages to the users involved with these elements.

This **ELMA** function is always available, whether you enable the system to send messages to your e-mail or not.

If you have new unread messages, you will see their number in the red circle next to the **Messages** icon in the left menu. In the user menu, above the **Messages** icon you will also see the same red circle that informs you on the number of unread messages (Fig. 28).

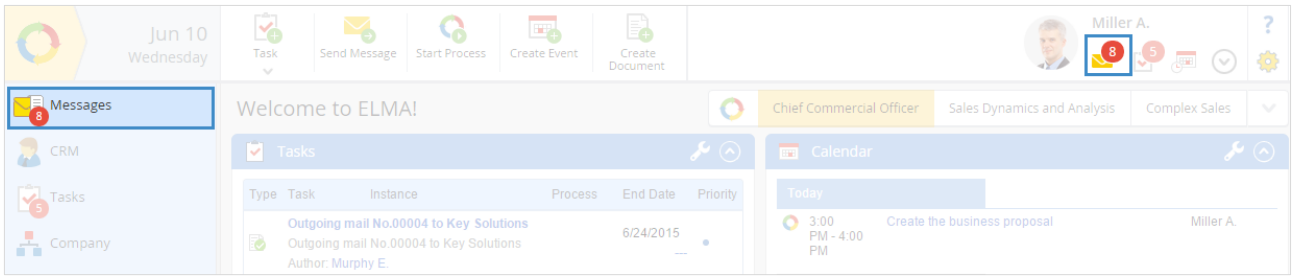


Fig. 28. Message notification

To go to the **Messages** page click **Messages** in the left menu of **ELMA** main page.

See an example of **Messages** page in Fig. 29.

ELMA shows unread messages highlighted bright. Messages marked as *read* appear in a pale color. If you click on an unread message, it will automatically change its color and the system will mark it as *read*.

The **Messages** section shows the message itself and the related comments. You can leave a comment or ask a question in the special field.

The most recent messages are displayed at the top of the list.

By default, this section displays the last 10 messages and 10 related comments. To view more messages click **Next** under the last message or scroll down the page. Click on the subject of a message to open its page.

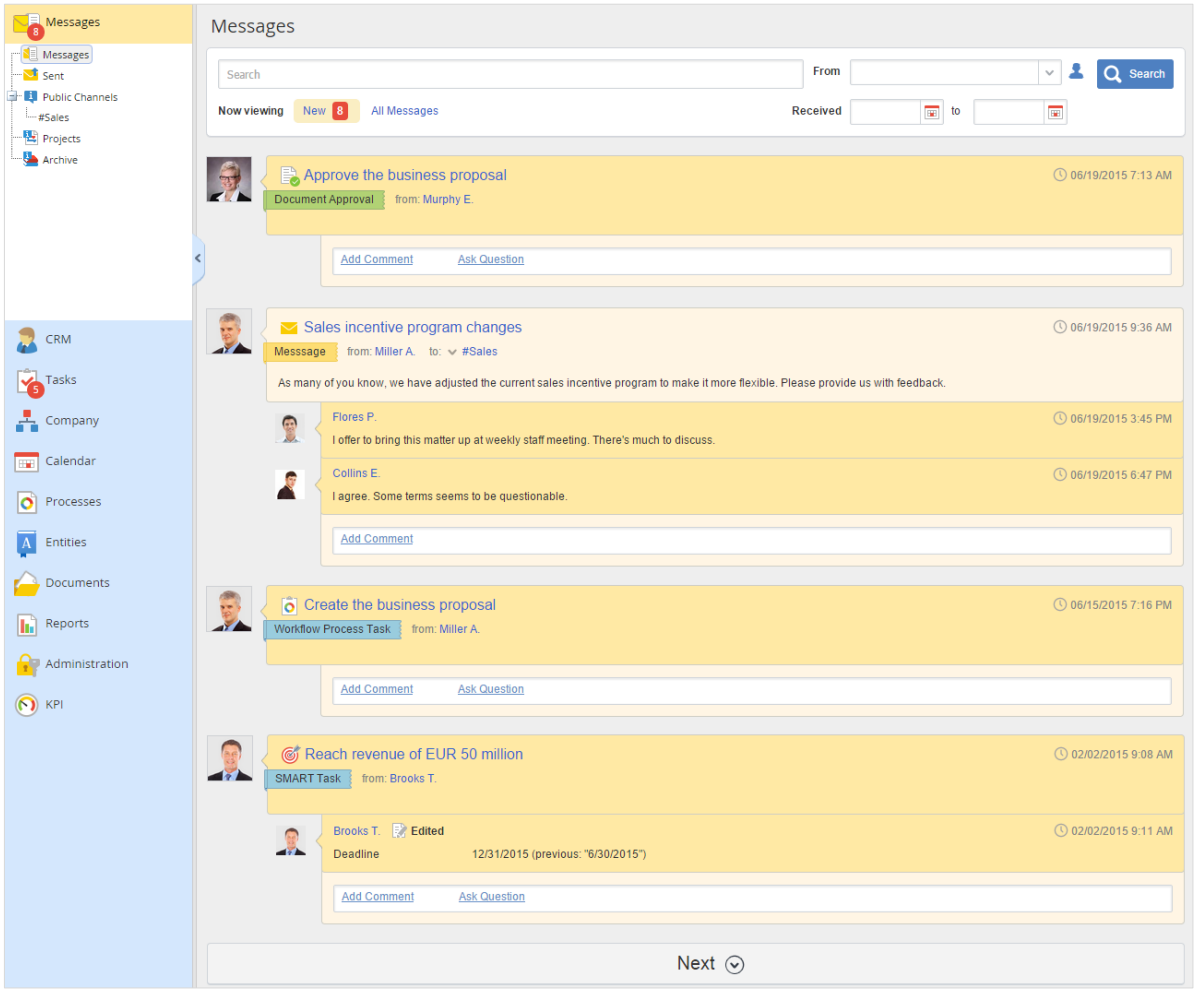


Fig. 29. Messages

Sent. This section shows a list of sent messages.

Public Channels. Shows a list of the available communication channels and their content. In this section, employees can create groups to discuss specific subjects, e.g., the company's news. It allows you to see the whole discussion on a specific subject in one place.

Projects. Here you can see a list of the available project channels and their content (If you have enabled the **Project Management** module).

Archive. Shows a list of the information channels sent to archive.

Searching messages

Quick Search allows you to search the section you are currently browsing. E.g., if you are in **Messages**, Quick Search will search through the content of the **Messages** section, and among system messages. If you are currently in **Sent** section, Quick Search will search through the sent messages.

See a search filter for messages in Fig. 30.

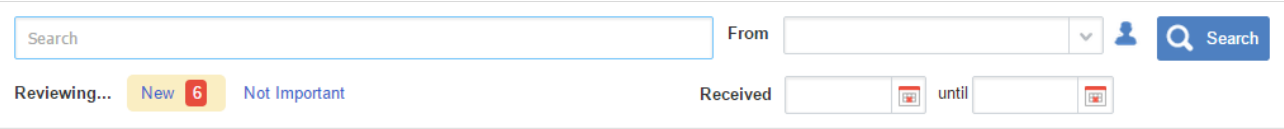


Fig. 30. Search filter for messages

You can search by specific criteria. To do this start typing first letters of the message subject or its content in the search box or set search parameters (e.g., sender name or reception date) and then click **Search**. The system will display all the messages with subjects and contents, which match specified search criteria.

In addition, when you are in the **Messages** section, you can send a message to another system user. Click **Send Message** button in the toolbar. In the dialog box that opens, type the names of the recipients (you can send a message to several users at a time), enter the subject and type the text of your message.

If you want to send a message to an information channel, check the name of the required information channel. All your recipients will receive the relevant notification and will see it in their **Messages**.

Chapter 4. Initial System Setting

Before you read this chapter, it is recommended to add a configuration as described in Chapter 2.

4.1 Setting the Administrator Password

An Administrator is a special user who configures **ELMA General Settings**. Administrator controls **ELMA** performance in your organization.

To sign in and configure the settings, specify **admin** as your username when authorizing. System Administrator can assign other administrators, thus, other authorized users will have the administrator permissions.

First, the Administrator must set a new password. When you install **ELMA**, the administrator password filed is empty; it means that you are not required to enter a password to sign in. The administrator account is a system account and it is not counted in the number of occupied licenses.

To change the administrator password follow the steps below:

Step 1. Sign in to **ELMA Web Application** using the Administrator account. Username: *admin*; password is not required.

Step 2. Click on **Profile** in the user menu. The user profile page will open.

Step 3. In the right upper corner of the user profile page, you will see **Actions**; in **Actions** click **Change password** (Fig. 31).

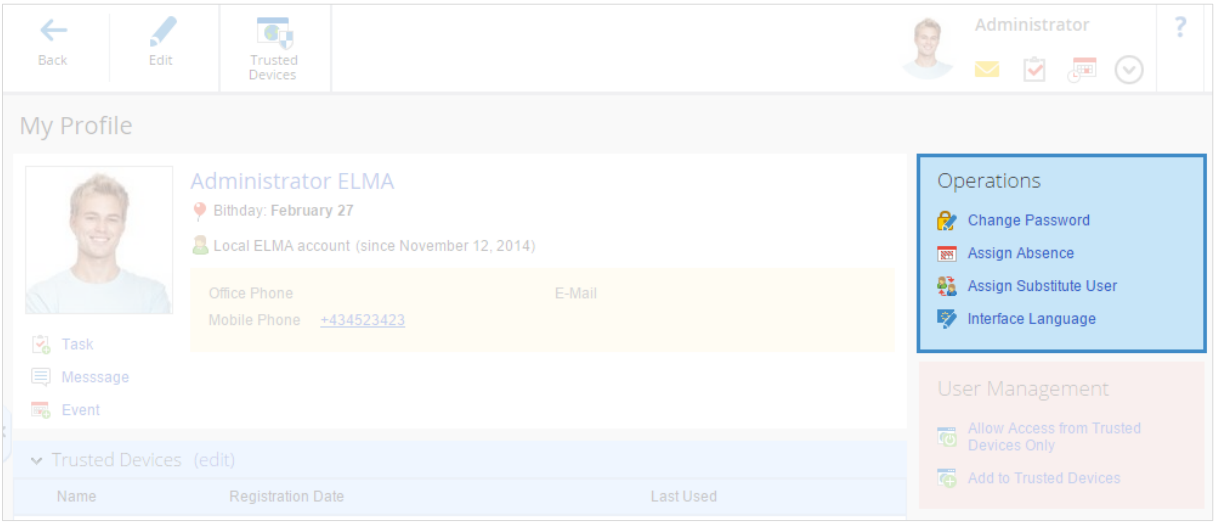


Fig. 31. User profile

Step 4. In the **Change Password** dialog box, you must enter the current password and the new one. When you set the administrator password for the first time, the field for the current password is empty, and you only need to type a new password. The new password must be complex enough. Since Administrator has access to all the system resources, it is very important to prevent unauthorized persons from accessing these resources.

Step 5. Click **Save**. If the current password is correct, the **New password** and the **Confirm password** fields match, the password will change and the **Change Password** dialog box will close.

Do not forget the administrator password. It cannot be recovered!

4.2 Initial Server Settings

After you have installed **ELMA Server**, it must be set up to integrate in your company's IT environment.

To configure the settings:

- Sign in the **Web Application** as Administrator (username: admin);
- In the left menu click **Administration**. The left menu will display the content of this section. Here you will see all the available settings. The similar settings are grouped in blocks.

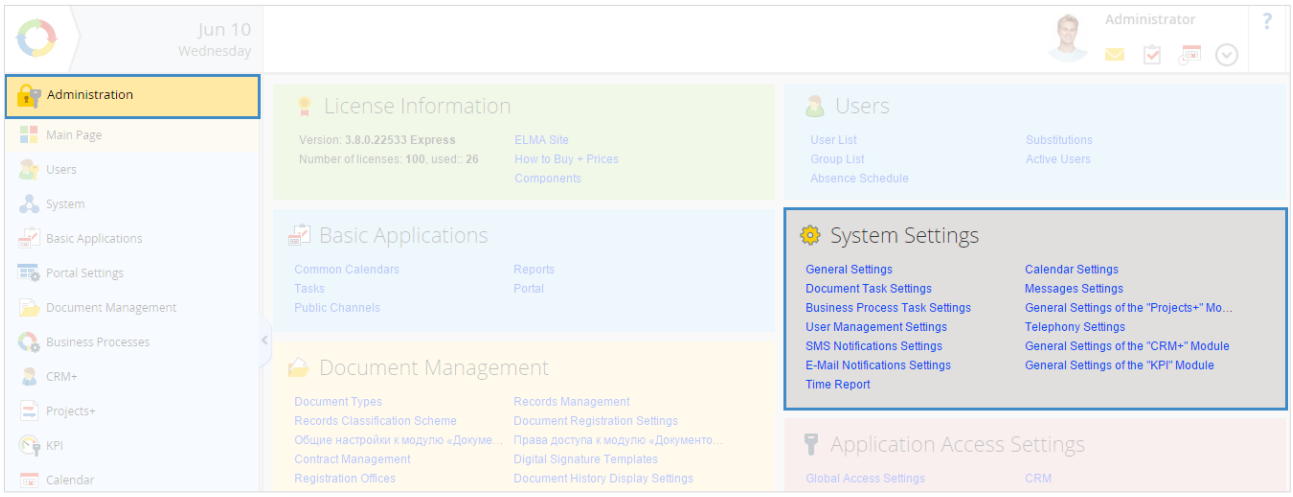


Fig. 32. A fragment of the Administration page

Below see the description of the most important settings blocks.

4.2.1. General Settings

To configure block settings click the icon to the right of the block header. The edit window will open.

In the **General Settings** block, you can edit the following settings (Fig. 33):

- **Window title.** Specify the title of the window you are currently browsing. By default, it is *{Title} - ELMA*. {Title} is a dynamic value and it changes depending on the section you are currently in. You can put your company name in the window title.

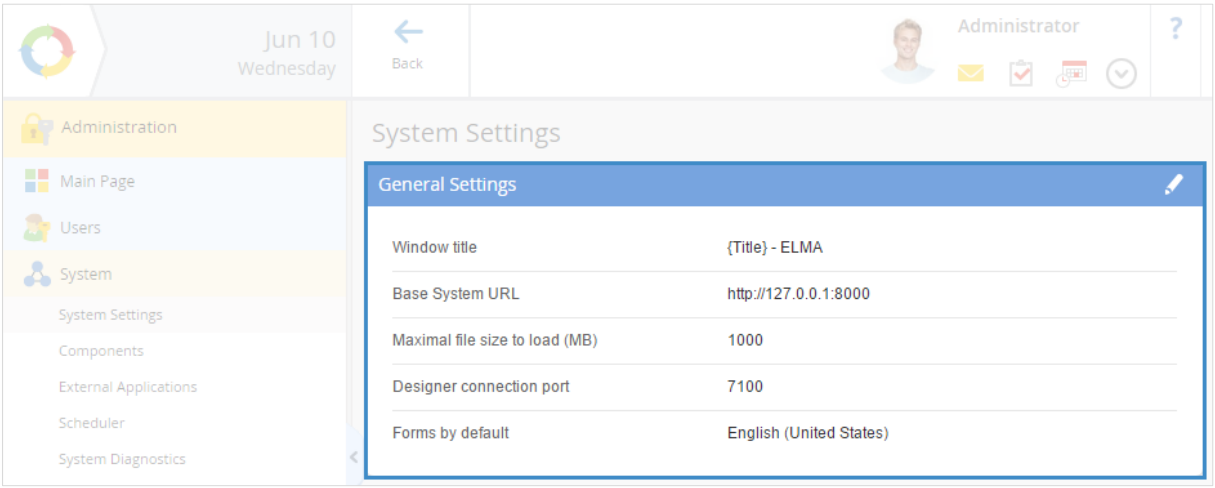


Fig. 33. A fragment of the "System Settings" page

E.g., Replace {Title} - ELMA with {Title} – Company. You will see the following: Fig. 34.

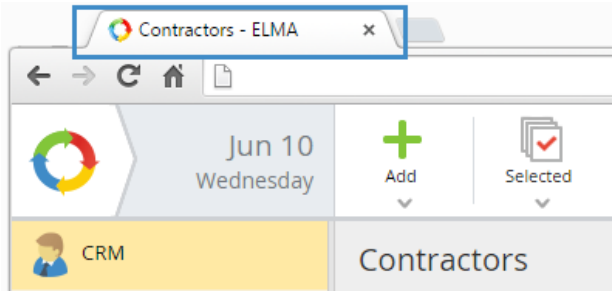


Fig. 34. Default page title

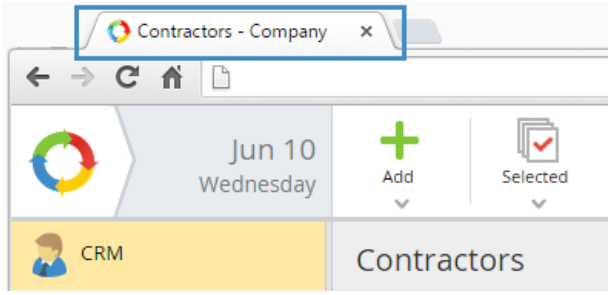


Fig. 35. Edited page title

- **Base System URL**. This is the address of web application. When working with **ELMA** users receive notification that contain links to the system pages. To generate these links **ELMA** uses Basic System URL.

You must specify the Basic System URL as: **http://<server_address>:<port_number>,** where:

<server_address> – the IP address of the computer where **ELMA** is installed;

<port_number> – the port number specified in the **Step 7** of System Setup Wizard (the default port number is 8000).

Please note: It is very important to write Basic System URL correctly, as it affects the operation of the system. An example of a correct Basic System URL: http://127.0.0.1:8000

- **Maximum file size to upload (Mb).** This setting allows you to set a limit on the size of files users upload. **ELMA** will check the size of the files before users can upload them to the system server. Larger files will be automatically rejected by the system.
- **Designer connection port.** This port connects **ELMA Designer** to **ELMA Server.**

After changing the settings, click **Save**.

4.2.2. Setting Access to the Web Application

You can connect remotely to **ELMA Web Application**. To do this, in your browser address bar enter an address in the format of **http://<server_address>:<port_number>** , where:

<server_address> – the IP address of the computer where **ELMA** is installed;

<port_number> – the port number specified in the **Step 7** of System Setup Wizard (the default port number is 8000).

To provide access through the Internet you must use an external static IP-address. The server where **ELMA** is located must allow connections to this port. If there are anti-virus or Firewall software installed on the server, you must change its settings to allow connections to this port as well.

4.2.3. Outgoing Mail Settings

Users send outgoing e-mails to inform each other about the events inside the system. If this function is enabled, you will receive e-mails containing information about assigned and completed tasks, and other system activities you are involved in.

To ensure correct system operation, your outgoing mail settings must match your mail server settings. **ELMA** will send notifications only to those users who specified their e-mail address in their profiles.

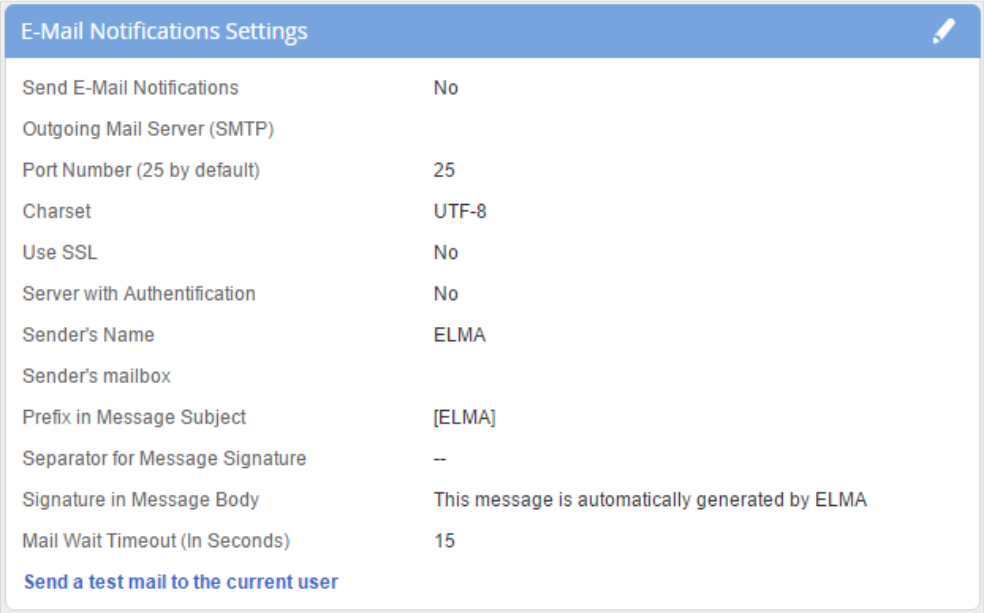


Fig. 36. Outgoing mail settings

In this setting unit, you must enter your mail server parameters and specify a sender name and e-mail. **ELMA** will send notifications on behalf of the specified sender.

You can change the prefix in the message subject as well as the separator and the signature in the message body. You will see the prefix in the message subject. E.g., by default, when you assign a new task, the executor of this task will receive a mail with the following subject: "[ELMA] (New Task) Task Subject". You will see the separator and the signature in the e-mail message body.

After editing the settings, click **Save**.

To check settings of the mail server click **Send a test message to the current user**. The system will send a test message to the mailbox specified in the profile of the current user (be sure to specify it). If the settings are incorrect, the error message will appear.

4.3 Designing Organizational Structure

On the first stage of **ELMA** implementation, you must design the organizational structure of your company. To do so, use **ELMA Designer**.

Organizational structure is a system of hierarchically ordered organizational units (positions, departments, company units). Simply put, the organizational structure is a graphic scheme of the company's management structure.

4.3.1. Purpose of Organizational Structure

Use the organizational structure to:

- Design business process models. You can assign business process participants only from the organizational structure.
- Work with **Tasks**. Managers have access to the tasks of their subordinates.
- Work with the **Calendar.** Managers have access to all the schedules of their subordinates.

Organizational structure defines the subordination between the employees.

4.3.2. Modeling Organizational Structure

The ELMA administrator models the company's organization structure in **ELMA Designer**, on the **Organizational Structure** tab.

By default, when you start **ELMA Designer**, the **Organizational Structure** tab opens. It contains tools for modelling company's organizational structure. In the center of the **ELMA Designer** window, on the ruled area you will see the **Organizational Structure** chart. When you create a new configuration this area will be empty.

In **ELMA,** the organizational hierarchy is represented as a tree-like structure, normally with the CEO at the top.

Please note, that the organizational structure modeling sheet can contain only one chart. **The chart can have only one head element!**

If you want to edit the organizational structure, use Drag-and-Drop elements. The side panel of the tab contains a list of all the available organizational structure elements. Use such elements as **Department**, **Job Position**, **Group of Employees** and **Nested Structure** to model

the corporate structure. To make a graphic model easier to read, you can use **Annotation** and **Group** (these elements do not affect the process execution in **ELMA**).

Intended use of the Elements:

Job Position. You can assign only one employee to one job position. Typical job positions are CEO, Chief Accountant, Secretary, etc.

Group of Employees. A group of users with similar duties. There is superior-subordinate relationship between the employees in the group.

Department. Usually consists of Department Head and Department Employees. There must be only one Head; the employees can be numerous. You can create user groups and separate job positions within a department.

Nested structure. This element allows you to create nested models of organizational structures. To do this, in the settings window click **Go to the nested structure**. It describes a part of the company's structure as an individual model. If the company has a complex multi-level organizational structure, the nested structure will make the model more readable. It is especially useful, if the company branches are located in different cities and you need to create a complex multi-level organizational structure.

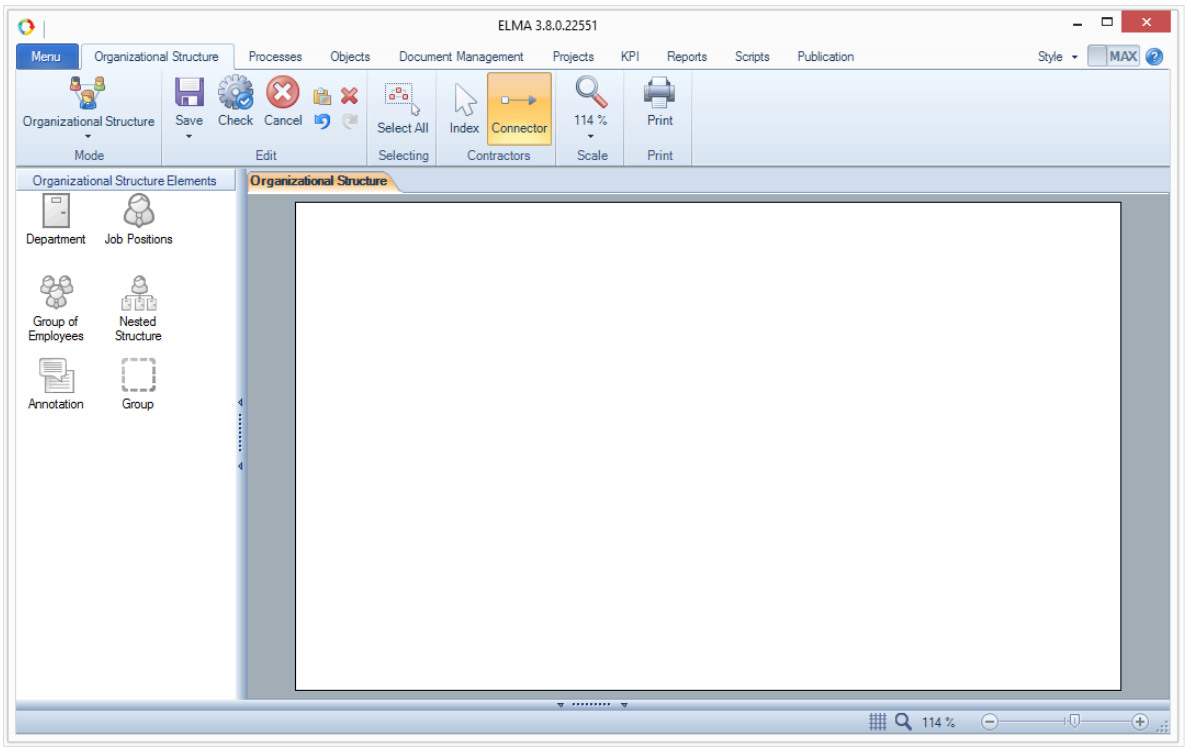


Fig. 37. ELMA Designer → Organizational Structure tab (new configuration)

You can use drag and drop to easily move elements from the **Organizational Structure Elements** panel to the modelling sheet (place the mouse pointer over an element, click and hold the left mouse button, move the element to the sheet).

Start modelling the organizational structure with the CEO position. Drag **Job Position** from the side panel to the empty modelling field. Double click to open **Job Position** settings window (Fig. 38). In the **Name** field, enter the name of the job position. Click **OK** to save changes.

Then add CEO's subordinates. To do this, add corresponding elements of the **Organizational Structure** and configure their settings, use connectors to link them.

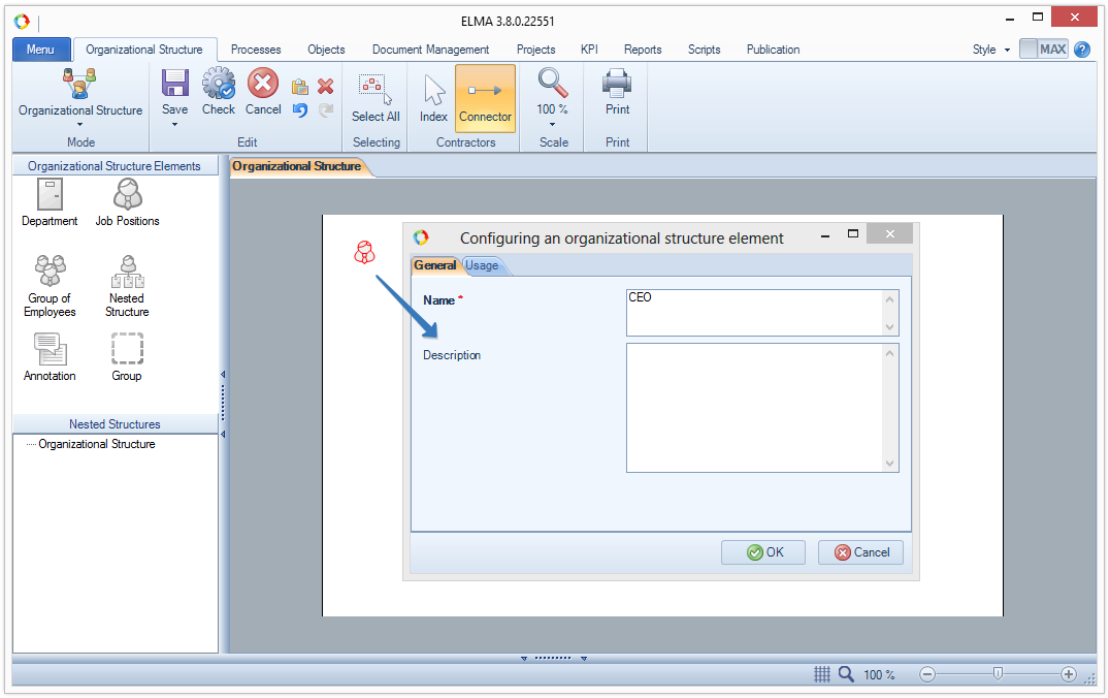


Fig. 38. Adding and configuring an organizational structure element

On the toolbar, click **Index**. Move the mouse pointer over the element on the modelling sheet. Green icons will appear around the element. Choose the one you need, drag it with a mouse and "drop" it in suitable place of the modelling sheet. The system will automatically create a field for a new element name and a connector (Fig. 39).

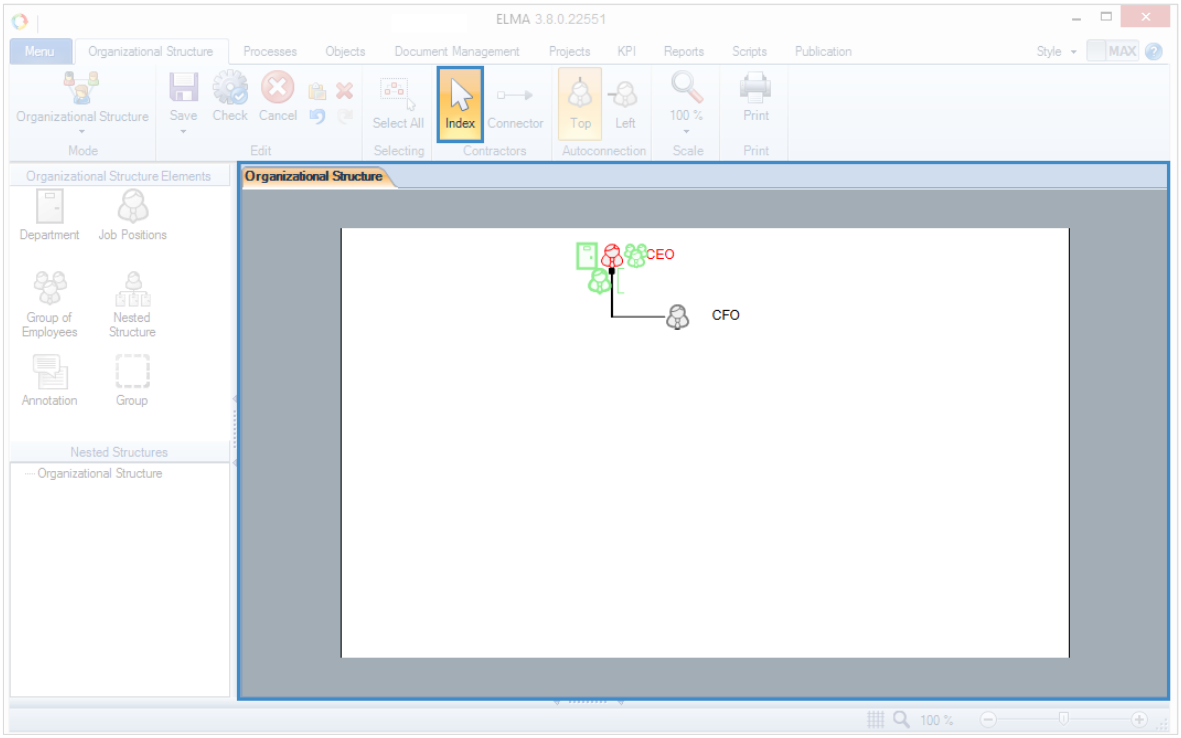


Fig. 39. Adding an organizational structure element to the modelling sheet

You can add other elements in a similar way, only the elements' settings will be different.

You must connect all the elements of the organizational structure to describe the corporate hierarchy. It cannot contain unrelated elements. See an example of the organizational structure in the Fig. 41. Further, this structure will be used for process modeling.

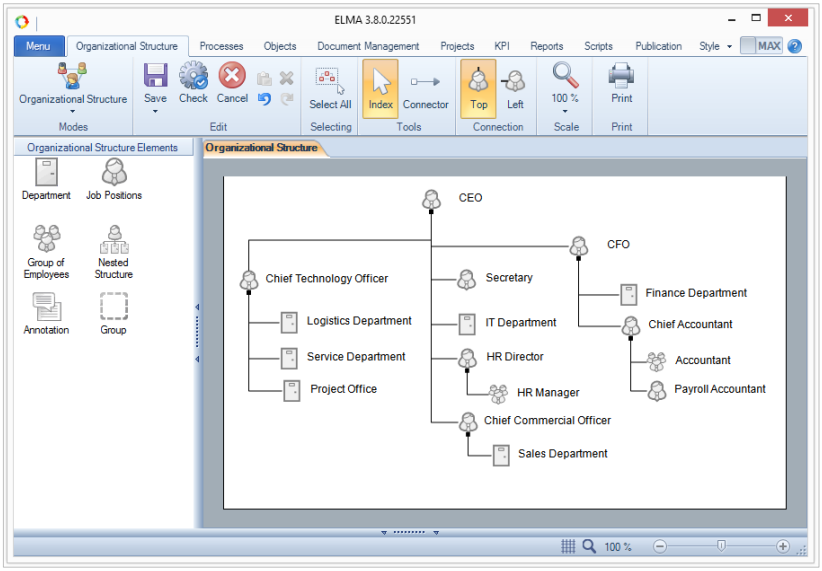


Fig. 40. Organizational structure

After creating or editing the organizational structure, you must save it. To do this, on the **Organizational Structure** toolbar click **Save.**

You can always check if there are any errors in your structure by clicking **Check** on the toolbar. The system will give a warning every time it detects errors. To apply changes you must publish the organizational structure.

4.3.3. Publishing Organizational Structure

You must publish the organizational structure to be able to use it. To publish the organizational structure, click the multi-function **Save** button and select **Publish** (Fig. 41). **Publish Organizational Structure** dialog box will open. Enter a comment that describes the changes and then click **OK**. If the organizational structure is modeled correctly, in the emerged window you will see a confirmation of the successful publication.

After you have published a new version of the organizational structure:

- You can assign job positions to the users in **Administration** → **Users**
- Use the new organizational structure to design business processes models

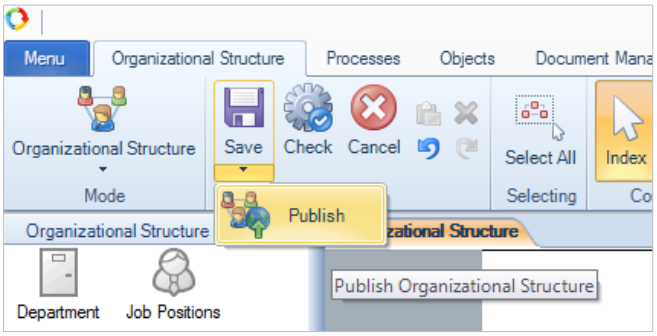


Fig. 41. Publish button

4.4 Creating Accounts

After you have developed and published of the organizational structure, you can start creating user accounts.

To create user accounts, open **ELMA Web Application** and sign in as Administrator (username: admin). In the left menu of the portal, click **Administration**. A page with settings grouped in units opens. Find the **Users** unit and select **User List** (Fig. 42). A page with a list of the active users opens.

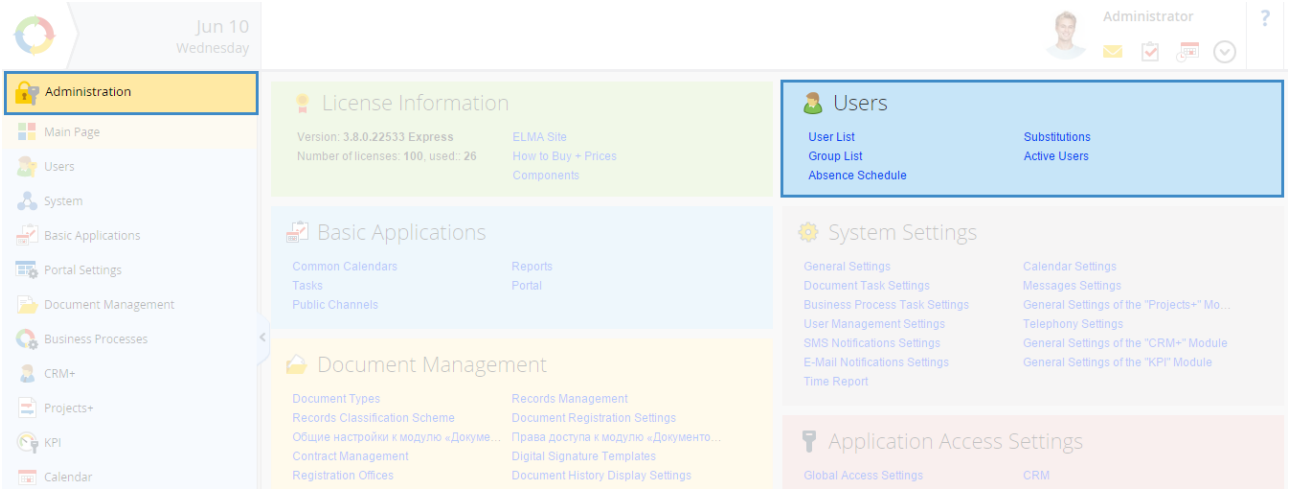


Fig. 42. Administration → Users

To add a new user click **Add User** in the top menu of the page. In the page that opens, enter the user data (Fig. 43). All the required fields are in **bold** and have a red asterisk (*) next to them. Specify the user login in the **Account** field. It is required to sign in to **ELMA**. Use numbers and letters of the Latin alphabet.

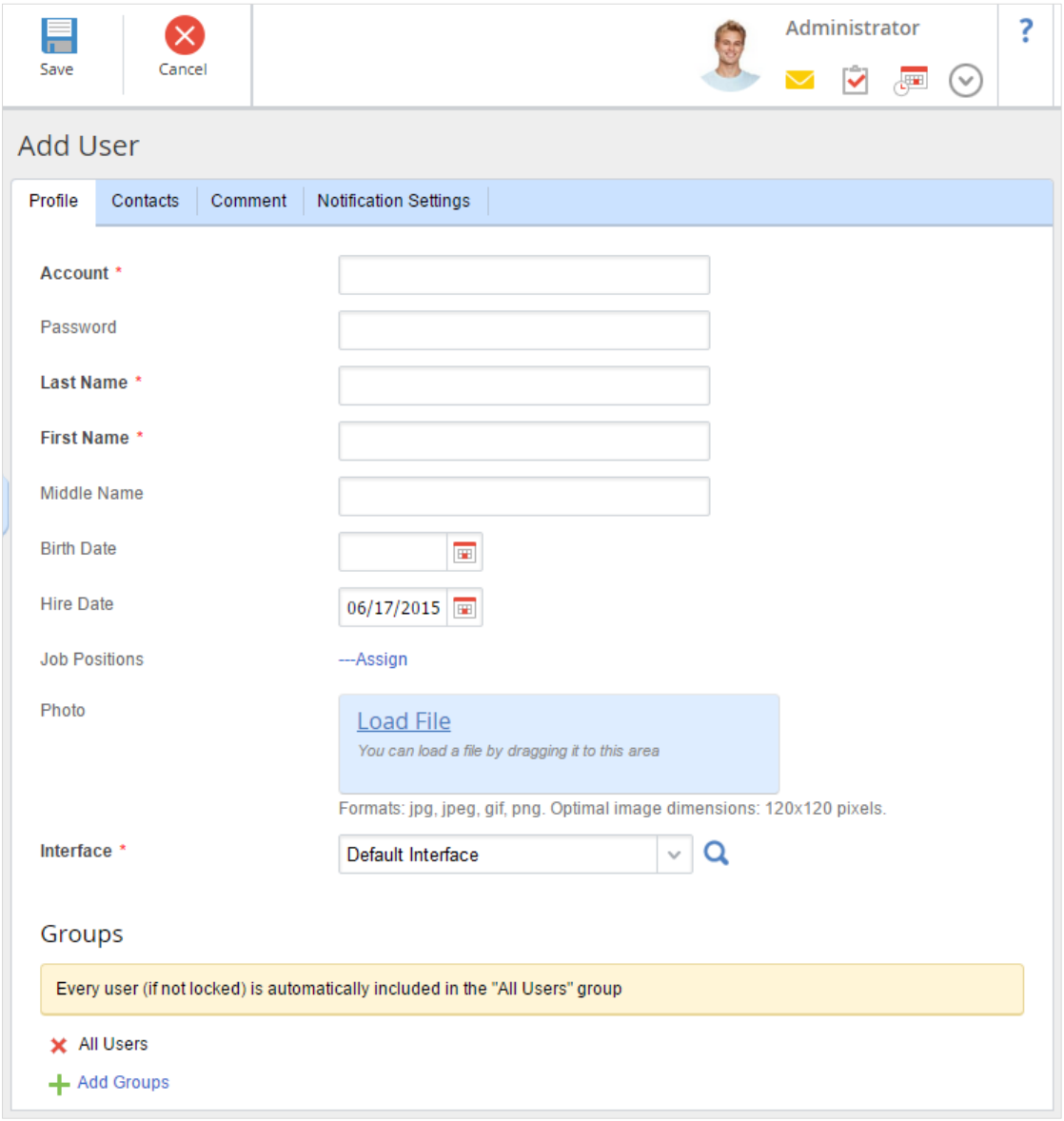


Fig. 43. Add User page → Profile tab

If you have already created and published organizational structure, you can assign users to job position. To do this, click **Assign**, the organizational structure window will open; select the job positions for the user by checking the relevant organizational structure element (Fig. 44).

When you assign a user to positions, please note that:

- You can assign only one user to each job position.
- You can assign the same user to different job positions.

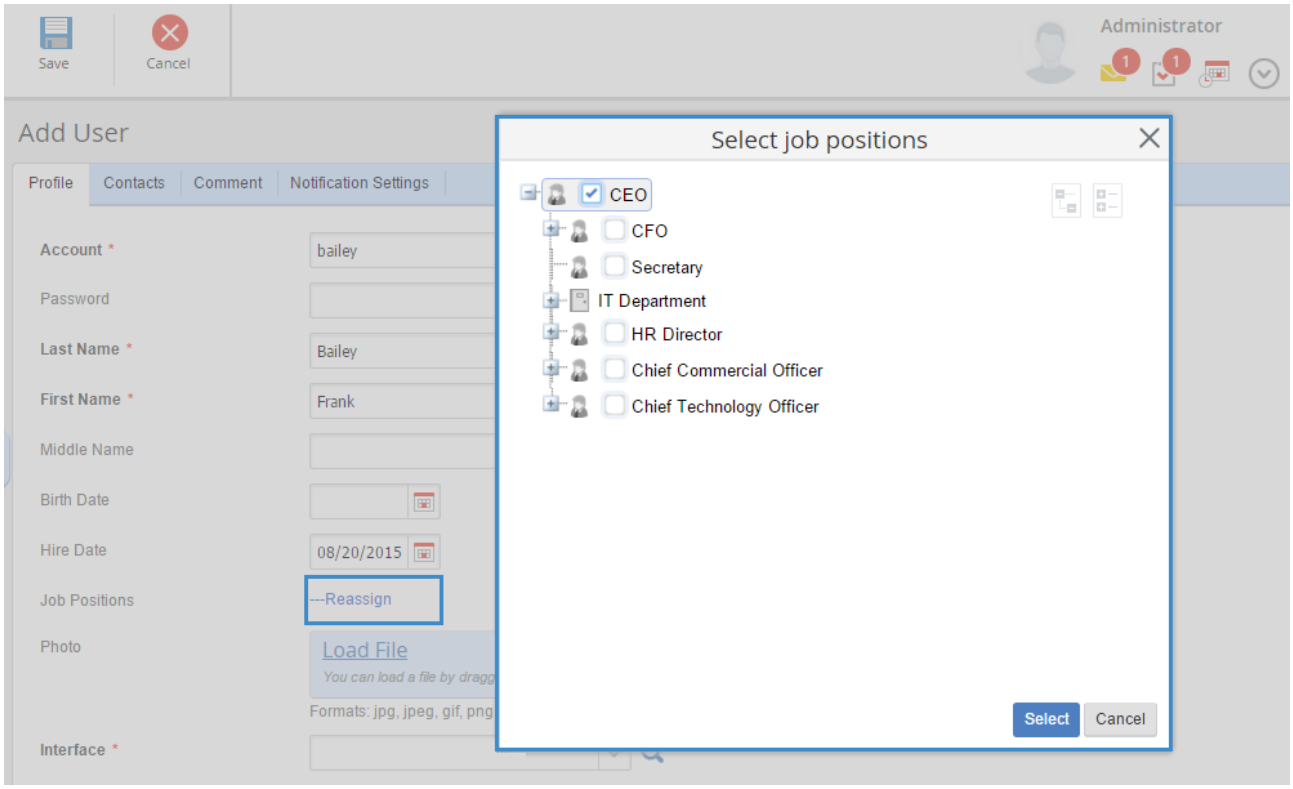


Fig. 44. Assigning a user to a job position

Chapter 5. Business Processes

A **business process** is a series of logically related, structured activities or tasks that produce a specific service or a product.

ELMA BPM offers many possibilities for successful business process management. All the **ELMA** functions can be easily divided into four groups according to the stages of the Plan-Do-Check-Act Cycle (Deming Cycle):

- Design (modeling)
- Execution
- Control and monitoring
- Optimization

This chapter is arranged in four major sections, each describing one of the mentioned stages.

Use **ELMA Designer** to design and improve business process models. Created, configured and published business processes are executed in **ELMA Web Application**. You can execute business processes created in **ELMA Designer** as many times as you want in **ELMA Web Application**.

A business process created in **ELMA Designer** is called "**business process model**", "**business process**" or just "**process**".

A business process started in **ELMA Web Application** is called "**business process instance**" or just "**process instance**".

5.1 Modeling Business Processes

ELMA uses BPMN 2.0 that is well known to business analysts and easy to understand for executives.

To start working with a business process you must:

- Start the Process Wizard and set the initial data of the process.
- Design the business process model (create a graphic model, fill it with the context, set the responsibility matrix).
- Debug the process by clicking **Check** and **Start Debugging**.
- Publish the business process.

ELMA not only allows you to model new processes but to improve existing ones.

Further explanation of business process modeling will be based on the example of the **Leave Request** process.

Below is the **Leave Request** process description:

Any employee who needs a leave can start the **Leave Request** process. The employee's direct manager must approve the **Leave Request.** Both the employee's direct manager and the CEO must approve the **Leave Request**, if the employee is absent for a period longer than 1 day. The HR-director will receive notification on employee's absence, if the leave takes less than one day. In cases when the leave takes more than one day, the HR-director must record it. If it is a regular leave, an Accountant must Calculate Leave Pay and hand out cash. Any of the accountants can do it. After the **Leave Request** approval, the initiator of the process must write the request and submit it to HR department.

5.1.1. Brief Description of BPMN

BPMN is a method of illustrating business processes in the form of a diagram similar to a flowchart. BPMN provides a standard notation that is easy to understand for developers who are responsible for the processes implementation, analysts who create and improve processes and management personnel who monitor and control processes.

BPMN describes any process as a chain of operations (activities), executed sequentially or in parallel, in accordance with certain workflow rules.

Bellow you will find a brief overview of the main BPMN elements that you can use to model a process when working with **ELMA**.

Swimlanes are BPMN elements used to separate and organize activities by participants. Each **Swimlane** represents a participant; activities placed in the **Swimlane** are activities that the participant is in charge of.

Each business process must have one **Start Event.** The **Start Event** shows where the process can start. In BPMN, the **Start Event** is a small, open circle. (In ELMA, it is a green circle).

The **End event** marks where the process ends. Within the process, multiple **End Events** might exist depending on the number of process paths. In BPMN, the **End Event** is a small, open circle. (In ELMA, it is a red circle).

All the elements logically connected to each other and placed between the Start and End events show the sequence of the process.

An **Activity** is the main element that represents the work performed within the process. It is a step within the process. An **Activity** is an executable element of the BPMN Process.

You can find a full description of Activities in **ELMA Designer Help.** This chapter gives detailed information about three activity types:

1. **User Task**. Work that must be done by a user. When users finish this work, they must enter certain information in the form and click one of the available buttons to continue.
2. **Manual Task**: A task that is external to **ELMA**. E.g., “Sign paper contract”. You can place this activity in the business process model if you want to make it easier to understand. **Manual tasks** do not interfere with the process execution.
3. **Script Task**: **ELMA** executes this operation automatically. **Script** is an activity that executes a program code at any stage of a business process.

Another element of a business process model is a **Gateway.** The **Gateways** are modelling elements, which you use to:

1. Check if the condition for the execution of the business process is true or false and select one Sequence Flow from several Sequence Flows (E.g., system checks the amount of the contract. If the amount of the contract is low, the simplified approval procedure will be carried out). In this case, it is an **Exclusive Gateway (XOR)**.

2. Create a **parallel flow**. (E.g., various employees simultaneously approve the contract). In this case, it is a **Parallel Gateway (AND)**.

To link **Actions** and **Gateways** you must use the **Connectors**. A **Connector** is an arrow → going from the source element towards the target element. **Connectors** show the sequence of flow.

Create and design a business process model in **ELMA Designer**.

5.1.2. Creating Business Process

To create a new business process use **ELMA Designer.** In **ELMA Designer,** find the **Processes** tab. It contains the **Process List** with all the processes created for this configuration.

An empty configuration may already contain some processes, related to **Contract Management** and/or **Projects+**, if these applications are installed. For all configurations, the scope of delivery also includes the **Improvement** process.

Thus, to create a new business process follow the steps bellow:

1. Start **ELMA Designer.**
2. In **ELMA Designer**, open the **Processes** tab.
3. Click the **Add** button on the toolbar (Fig. 45).

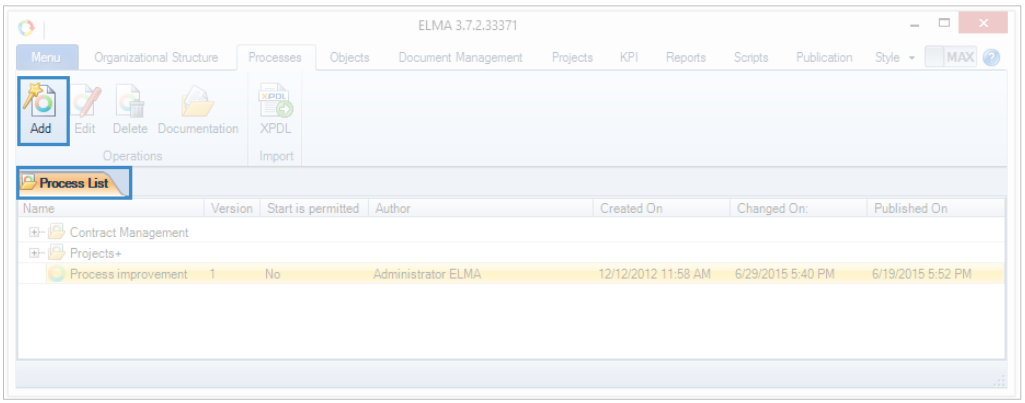


Fig. 45. Using Add button to create a new process in ELMA Designer

4. **Process Creation Wizard** opens and **Add Process** dialog box appears. Here you can configure the parameters of the new business process:

   i. **Step 1. Common Properties**. Enter the process name (Fig. 46). Do not change the default process group (**All Processes**) now. Later you can move the process to any group you want. Click **Next** to continue.

Fig. 46. Step 1 of the Process Creation Wizard

ii. **Step 2. Swimlanes**. Select and add the business process participants. To do this, use the organizational structure created and published before. In the **Organizational Structure** window, select one element. In the upper right corner of the Wizard window, click **Move.** The selected element will appear in the Swimlane area to the right. You will also be able to add or remove participants at the later stages of the process modeling. Select and move the following elements: CEO, HR Director and Payroll Accountant (Fig. 47).

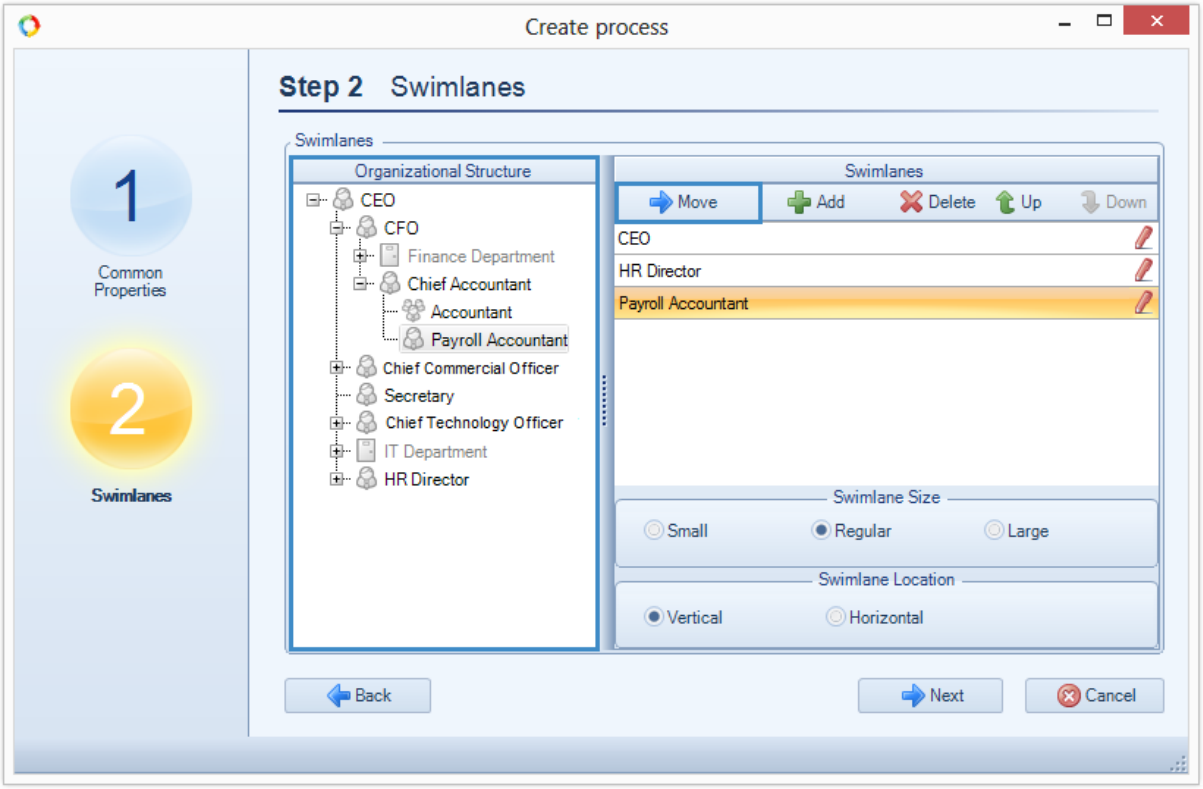


Fig. 47. Step 2 of the Process Creation Wizard

iii. Click **Next** to close **Process Creation Wizard**.

ELMA Designer will create a new business process with the start event and the swimlanes defined in the **Step 2** of **Process Creation Wizard** (Fig. 48). If you do not selected process participants in the **Step 2**, the new process will be created without swimlanes.

Now configure the swimlanes and design the process model.

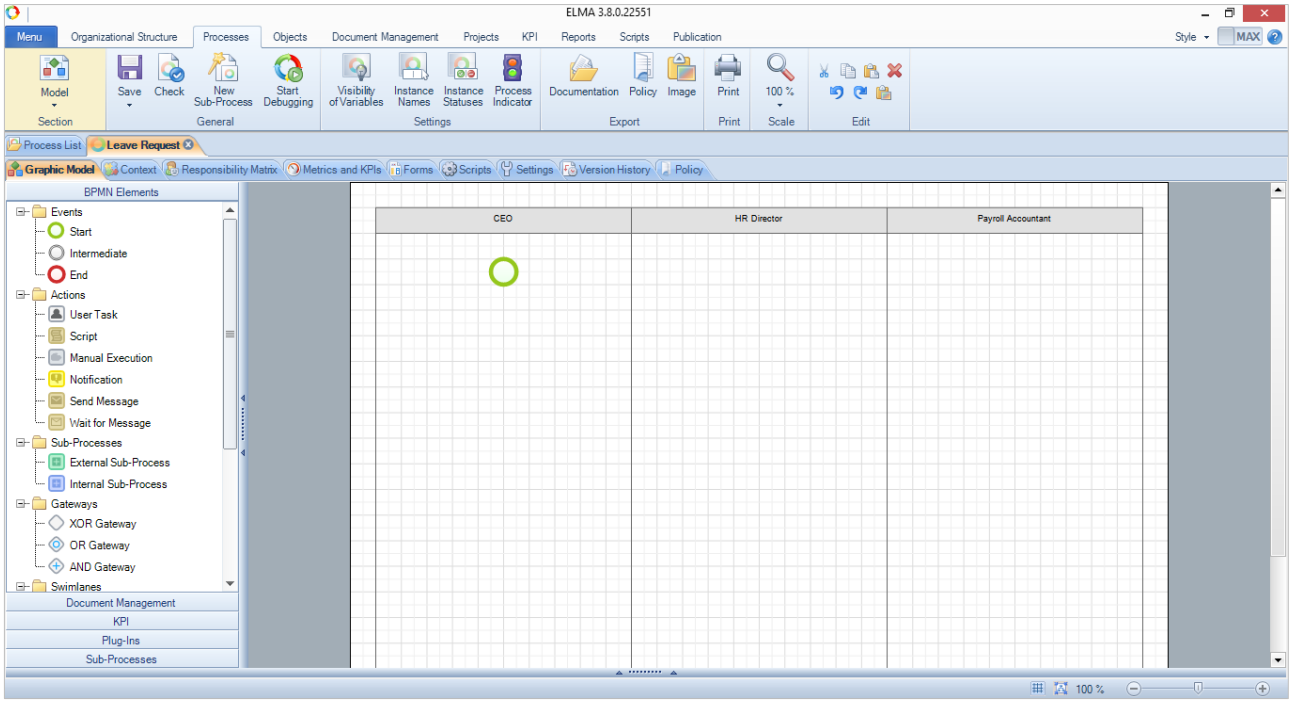


Fig. 48. New process with swimlanes

5.1.3. Configuring Swimlanes

This section explains how to configure swimlanes. According to the **Leave Request** process description (p. 52), the following users participate in the process: Initiator (any user), Initiator's Manager, CEO, HR Director and Payroll Accountant.

In the **Step 2**, you have created CEO, HR Director and the Payroll Accountant swimlanes. Now add two more swimlanes for the Initiator and Initiator’s Manager. To do this, select and move all the existing swimlanes to the right. In the left part of the window, find **Left Toolbar. Left Toolbar** contains several tabs and shows a list of all the available flow objects divided into groups according to their types. Drag two swimlanes from the **Left Toolbar** and place them to the left of the existing ones. Adjust the swimlane size. Place the start event within the leftmost swimlane.

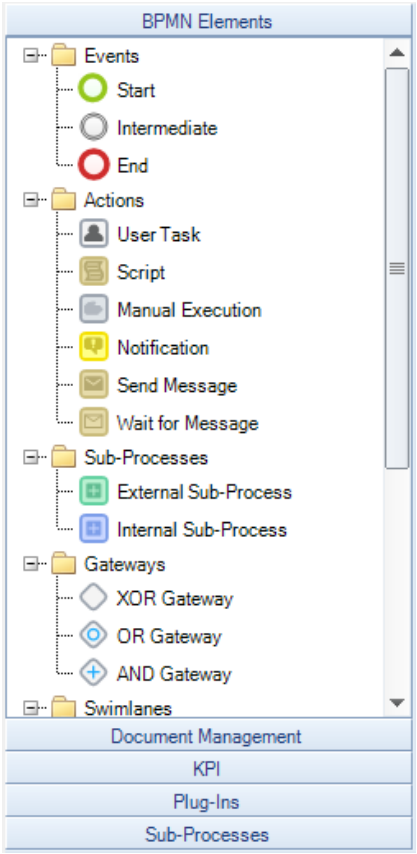


Fig. 49. Left Toolbar

Learn more about flow objects in **ELMA Help**.

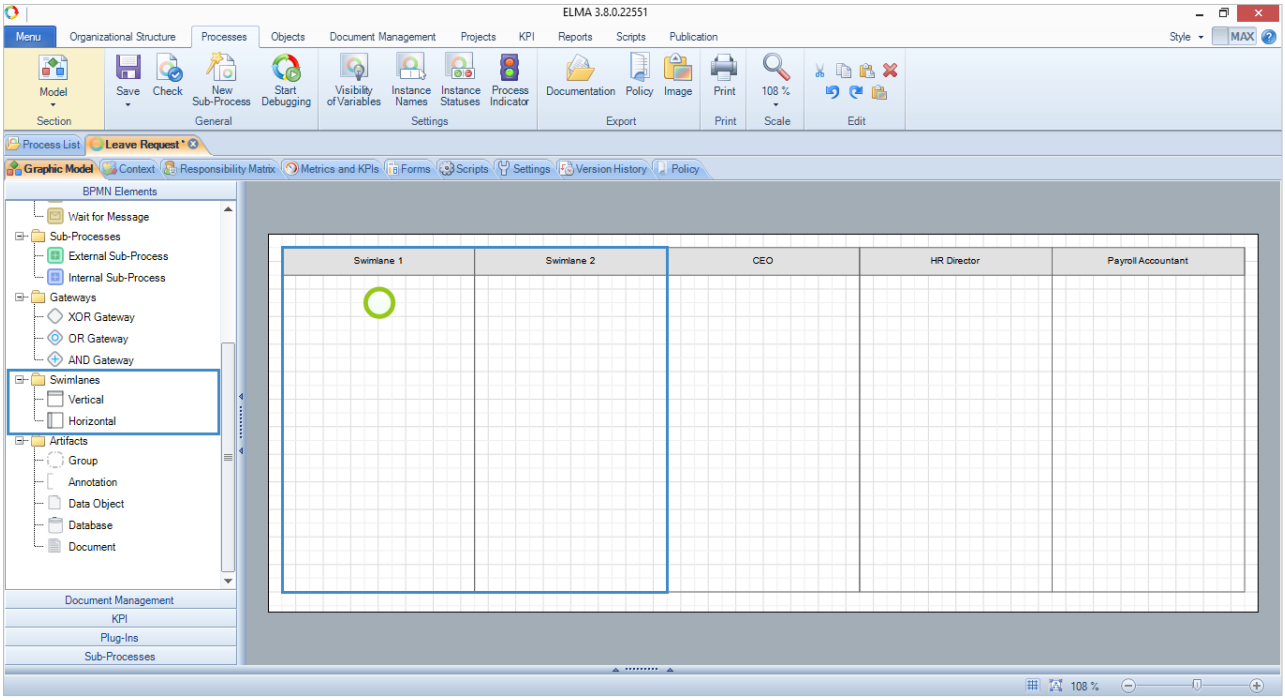


Fig. 50. Adding new swimlanes

All the swimlanes in Fig. 50 are static, i.e. the job positions of the responsible users do not change during the entire process. In the graphic model, such swimlanes are grey.

The **Swimlane 1** must represent **any** system user, regardless of the position he or she occupies. For such situations, you must use dynamic swimlanes: the job position of the responsible user is determined during the execution of the process instance. If you select the dynamic type for the **Swimlane 1**, the executor of the tasks placed within this swimlane will be the user who starts the process.

To configure the swimlane, double left click on its name. The swimlane settings window will open (Fig. 51).

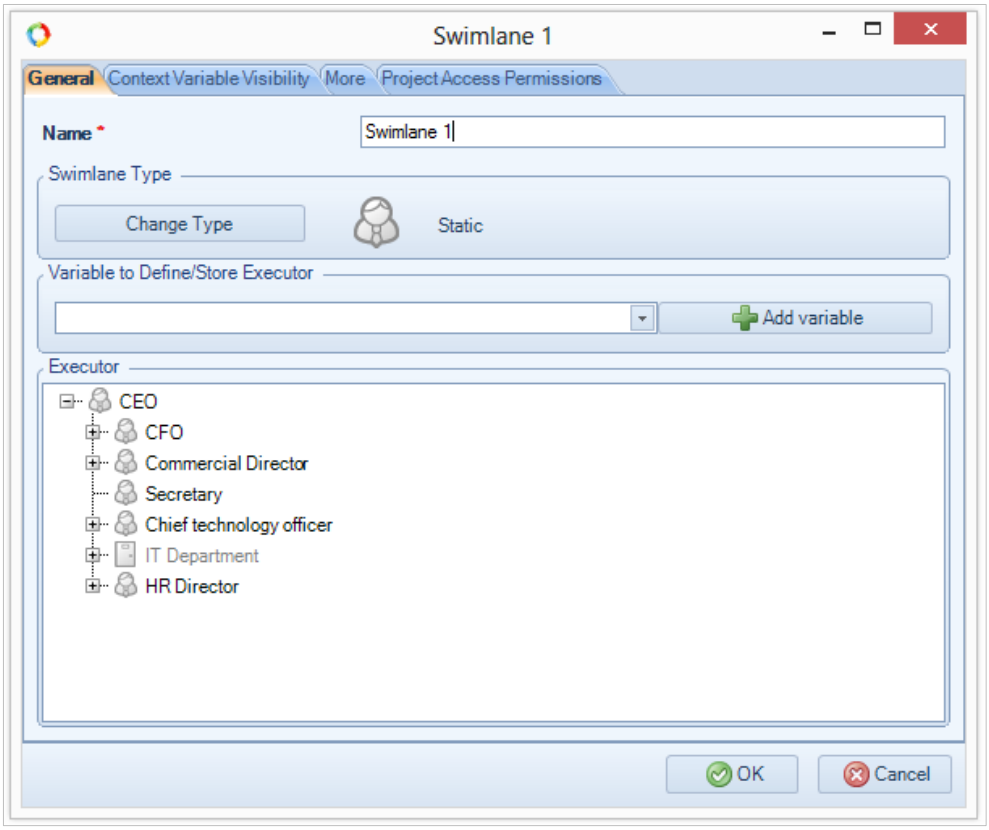


Fig. 51. Swimlane settings window

Enter a new name. Change the **Swimlane Type** to **Dynamic.** To do this click **Change Type** button and choose **Dynamic (select from the list).** (Fig. 52).

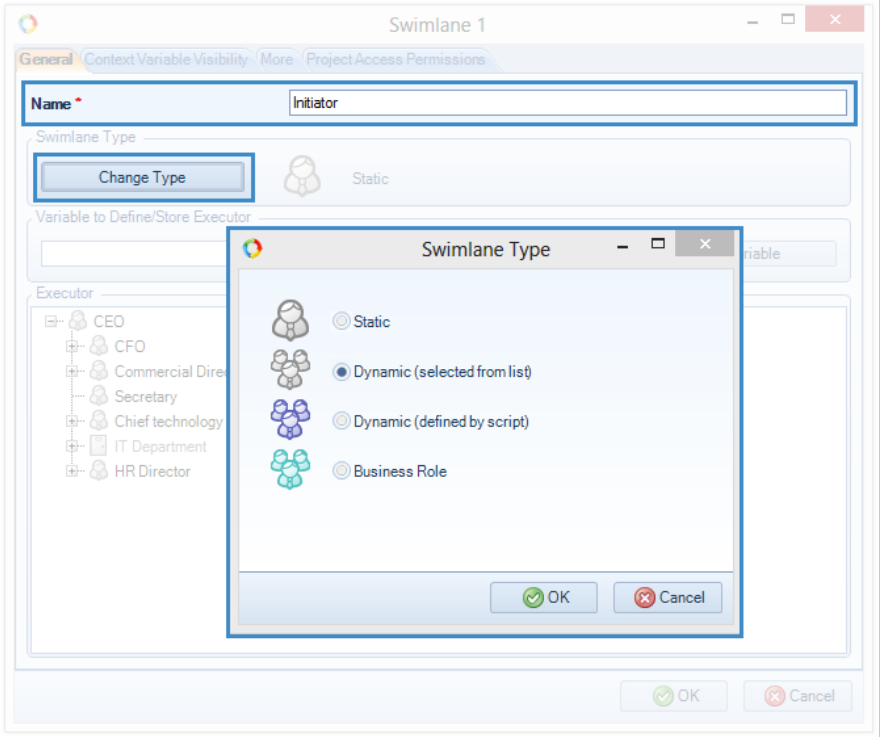


Fig. 52. Changing a swimlane type

Then add a process variable that will store the user - Initiator. Click the **Add Variable** button to open the **Property Settings** window. In this window, do not change the default settings (Fig. 53) and click **OK** to save the property.

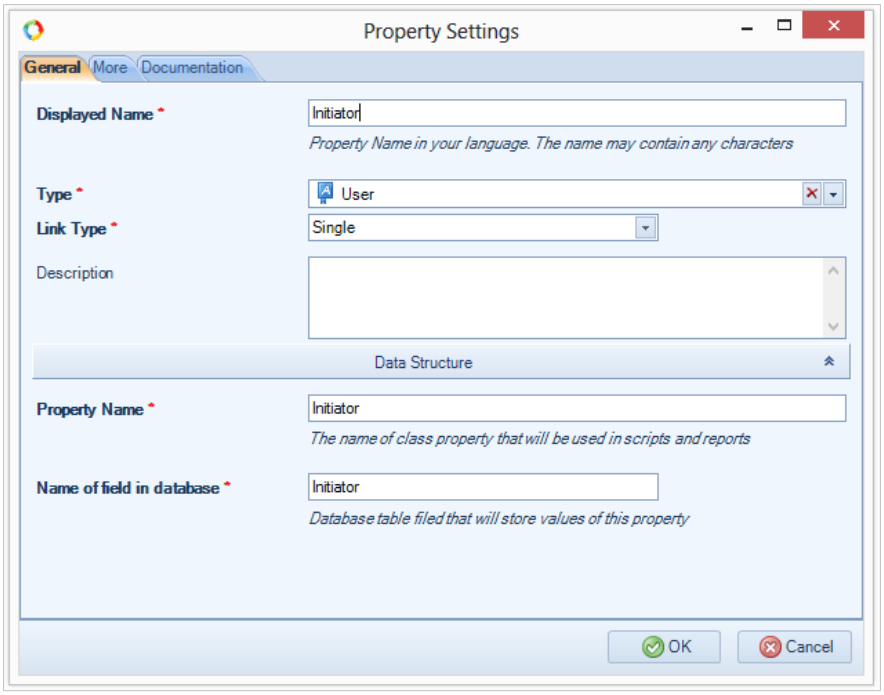


Fig. 53 Configuring property settings of the process variable

Then, at the bottom of the swimlane settings window add the users who can be the executors of the tasks placed in this swimlane. Since any user can start this process, do not change the default **All Users** group in job position/group panel. If you need to limit the swimlane user list, delete the **All Users** group and add the necessary job positions/groups (click the relevant buttons).

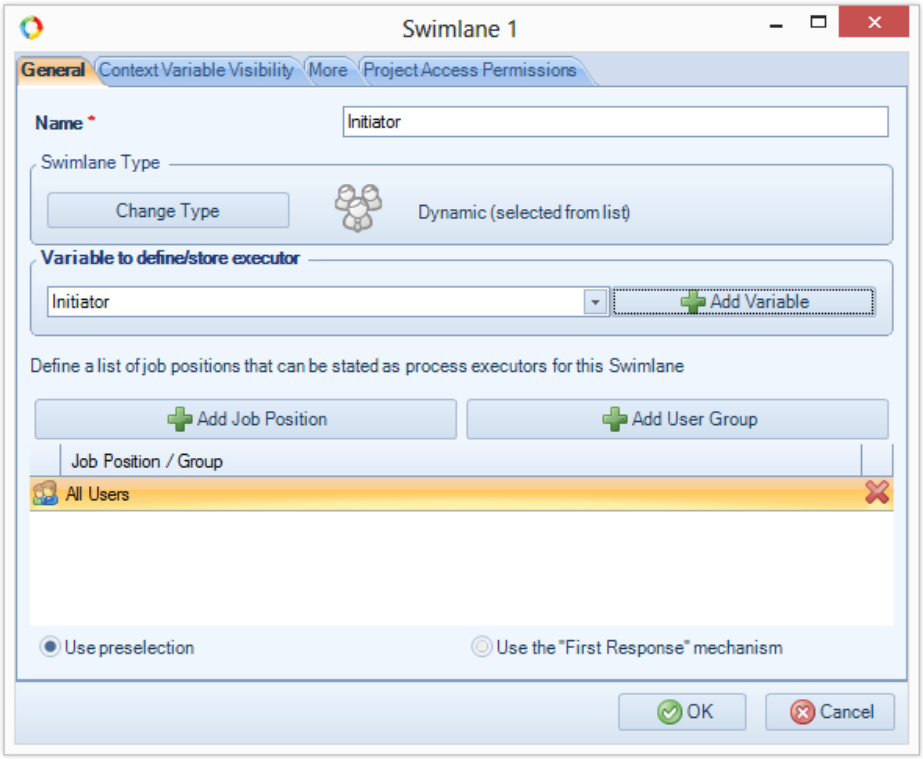


Fig. 54. Swimlane 1 → Settings window → General tab

See all the resulting settings of **the Swimlane 1** in the Fig. 54. Click **OK** to save your settings.

Now the name of the **Swimlane 1** is **Initiator** and its color is green.

After that, configure the settings of **Swimlane 2**. The executor of the tasks placed within this swimlane is the initiator's manager. For each process instance, this user will be determined individually. Therefore, use the dynamic swimlane to represent the initiator's manager and select only the executive positions from the organizational structure (Fig. 55).

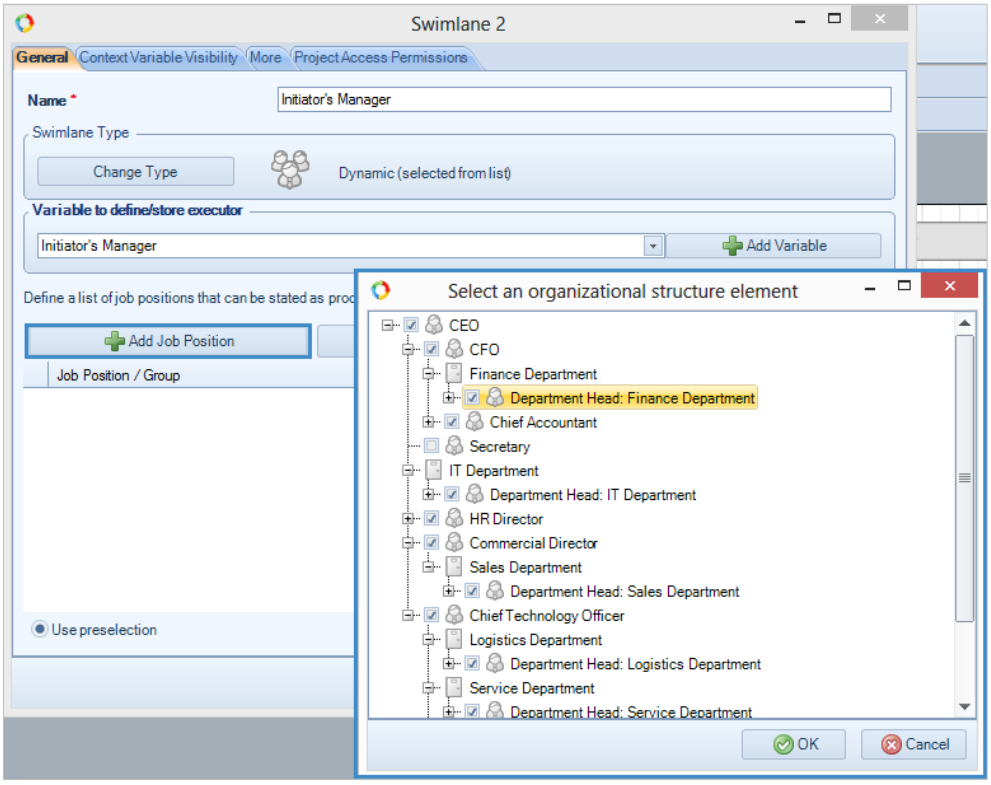


Fig. 55. Selecting executors of the task placed within the Swimlane 2

Below are the **Swimlane 2** settings:

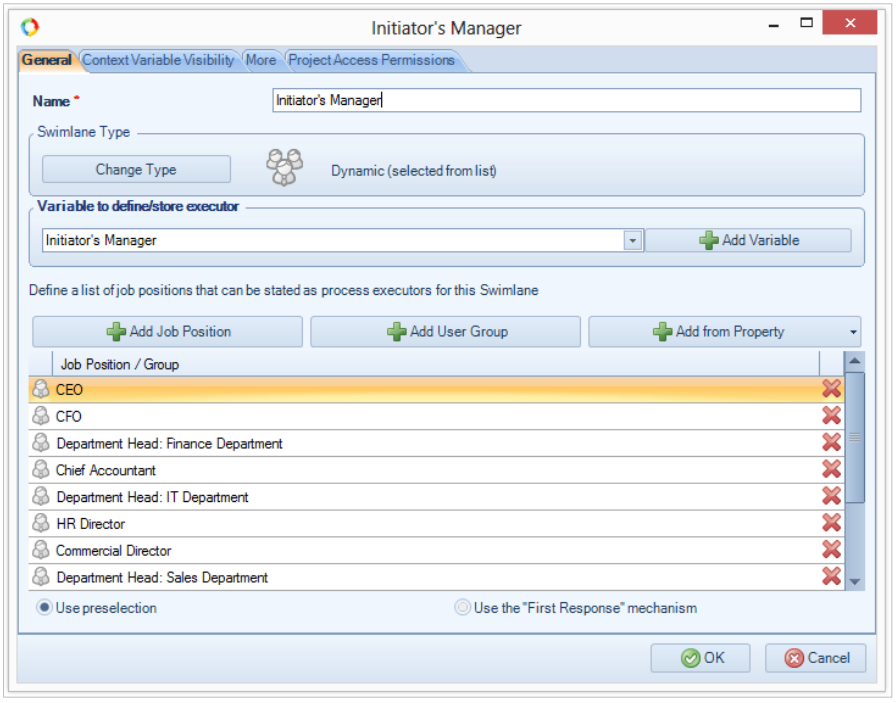


Fig. 56. Swimlane 2 → Settings window → General tab

Save the **Swimlane 2** settings and leave other swimlanes unchanged. Go to the next step of the process modelling - creating a chain of tasks (activities).

5.1.4. ELMA Activities

To create an activity drag the appropriate elements from the **Left Toolbar** and place them within the swimlanes.

To add **User Task** activity:

1. Use the mouse to drag the **User Task** icon from the **Left Toolbar** to the empty place within the swimlane that represents the user responsible for this activity. The system generates the name of this activity by default. You can change this name later. (Fig. 58).
2. Change the task name. To do this, double click on the task element you have just dropped in the swimlane. Task settings window opens. In this window, edit the **Name** field (Fig. 59). Type: **Fill in Leave request form**. When **ELMA Web Application** executes this process instance, the first task assigned to the user will have this name.
3. You can enter a text in the **Description** field to give a detailed explanation of the task or to leave a comment. Users will see this text on the task page below the task name.
4. Click **OK** to save the changes.

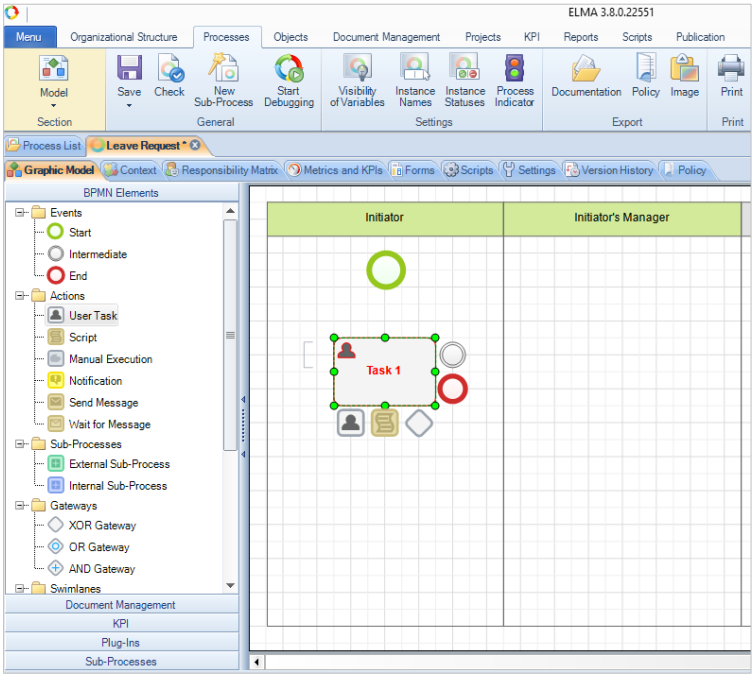


Fig. 58. Adding a User Task element

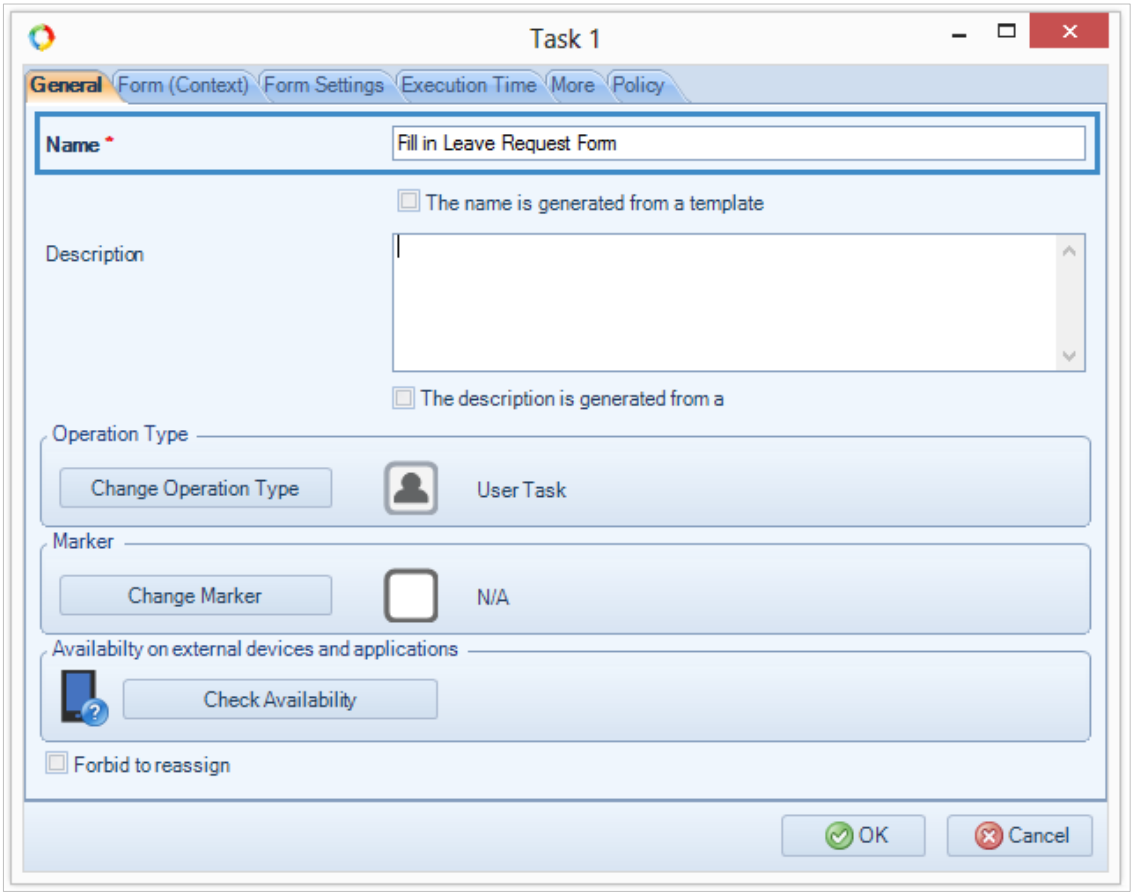


Fig. 59. Configuring a user task. Task settings window → General tab

The full description of **User Tasks** settings and other modelling elements is available in **ELMA Help**.

In a similar way, add other activities to the graphic the process model. Use the mouse to move the existing activities on the graphic model from one Swimlane to another.

See the result in Fig. 60:

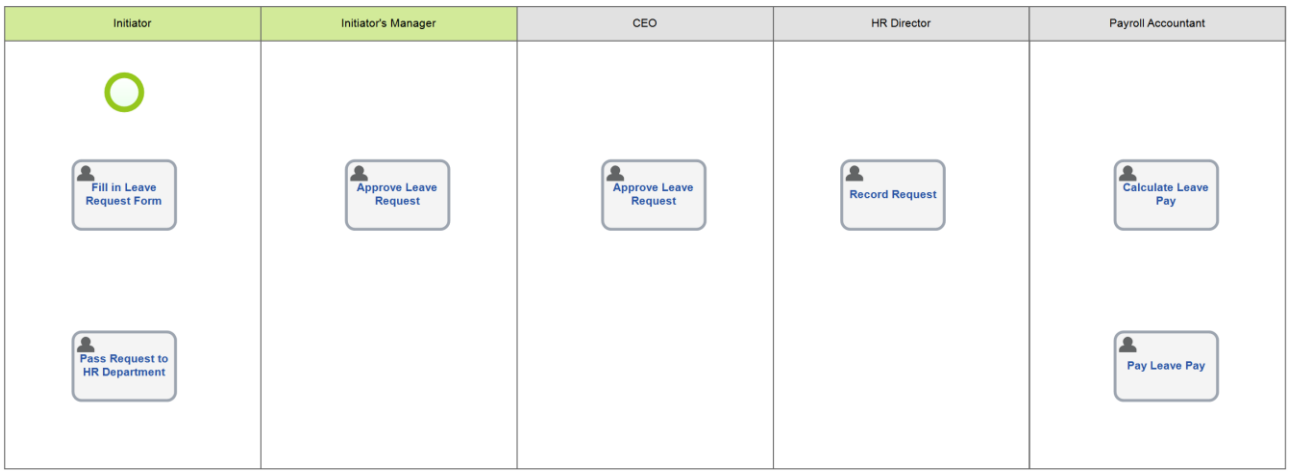


Fig. 60. Arranging the tasks in the business process model

The system uses such element as **Notification** to deliver messages to the participants of the business process. According to the **Leave Request** process description (p. 52), the HR-director will receive notification on user's absence, if the leave takes less than one day. Therefore, place a notification element in the HR Director's swimlane and change its name (Fig. 61).

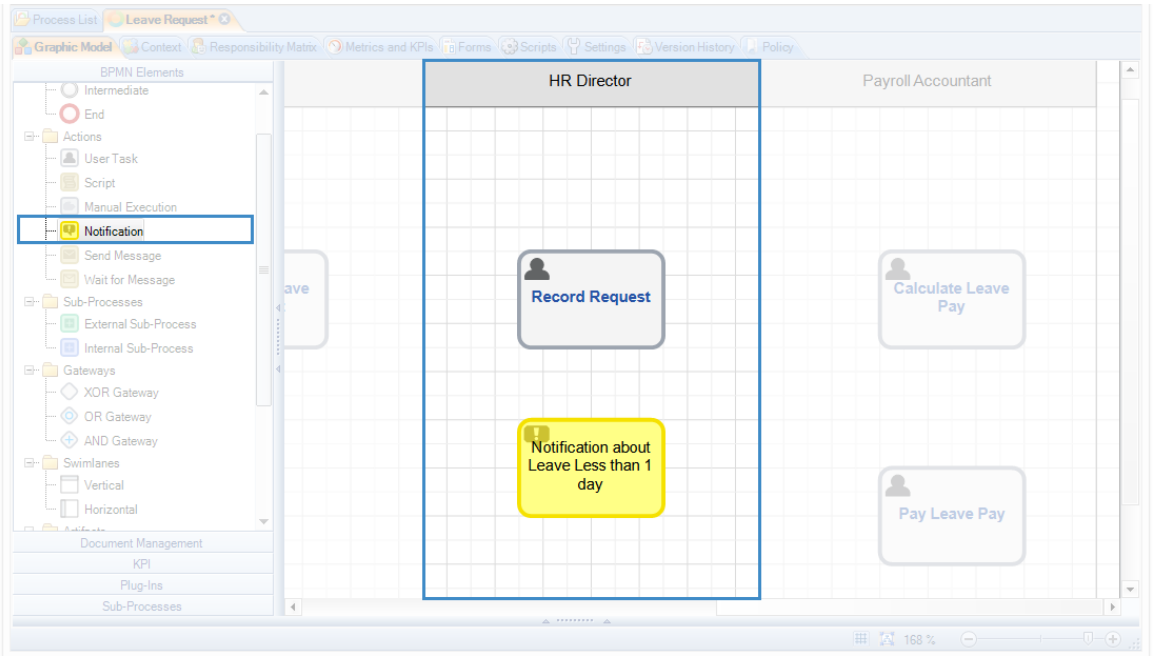


Fig. 61. Adding a notification

Place another notification within the initiator's swimlane. The system will send a message to the initiator if any of the approvers rejects the leave.

Now use the connectors to link the process tasks and create a sequence of activities.

One of the important user task settings is the execution time. By default, the task due date is not specified. To improve the execution of the business processes it is recommended to specify the task due date.

The easiest method is to specify relative date of the task completion. The system will automatically calculate the task end date depending on the specified value. You can also specify users who will receive system notifications on overdue tasks. If the user does not complete the task in time it will be highlighted red in the task list.

To set the due date for the user task double click on the **User Task** → **User Task** settings window opens → go to **Execution Time** tab → choose the **Task has end date** option. Then if you choose **Exact Value,** the due date value will be calculated in business week, days and hours; if you choose **Context Variable**, **ELMA** will use its value as the task's due date.

E.g., if you want the employees to treat the task more responsibly you must specify its end date. Specify the execution time of the **Submit Request to HR Department** task: it must be three working days. Also, configure the settings so that the HR Director receives a notification if the task is overdue.

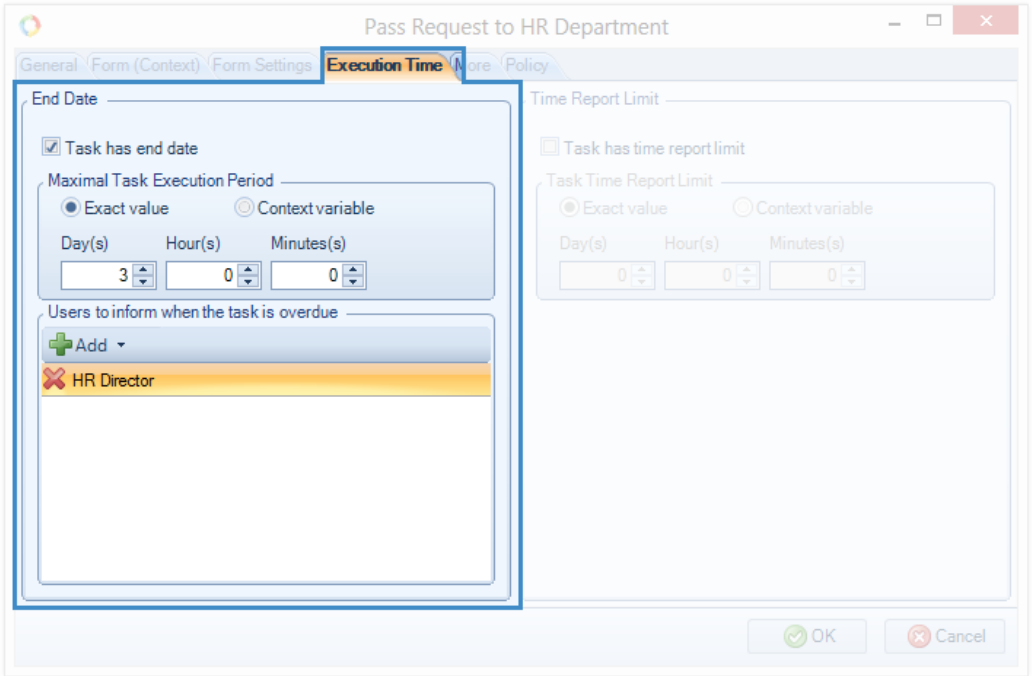


Fig. 62. Specifying the end date for the user task

5.1.5. Connectors

After you have arranged process activities in the graphic model, link them with **Connectors**. Connectors define the order of the flow objects.

To link two flow objects, move the mouse pointer to the edge of the first flow object - a small red square will appear next to the mouse pointer; it is a connection point. Now click and hold the left mouse button and draw the connection toward the second object. Another red square will appear on it. To connect two objects draw a line to that point. **ELMA** will create a connector when you release the mouse button.

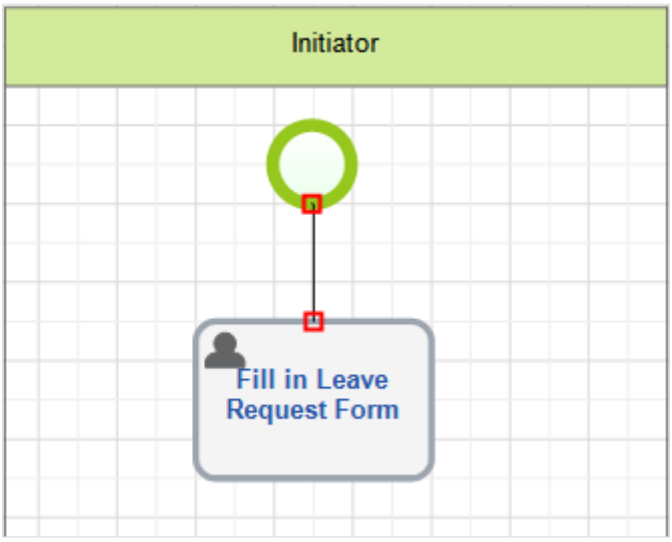


Fig. 63. Adding a flow line

To open connector settings window double click on the connector or select **Settings** in the connector context menu.

In the graphic model, some activities can have multiple outgoing connectors. E.g., a **User Task** activity with various outgoing connectors implies that you must decide which path the process takes after this task is completed.

In **ELMA Web Application**, on the **User Task Page** you will see task completion buttons. The number of the buttons depends on the number of the outgoing task connectors. The name of each button corresponds to the connector's name. If the connector does not have a name, the button name will be generated as follows: the ">" sign and the name of the target element of this connector.

Connect all the flow objects in the **Leave Request** process; enter the connectors' names. Add end events to the process: one for the rejected request and one for the approved request.

A user must be able to cancel process execution in case of false start. For this, draw an additional outgoing connector from the first activity. In the connector's settings window, select the **Do not check if the context variables are filled in** option (Fig. 64).

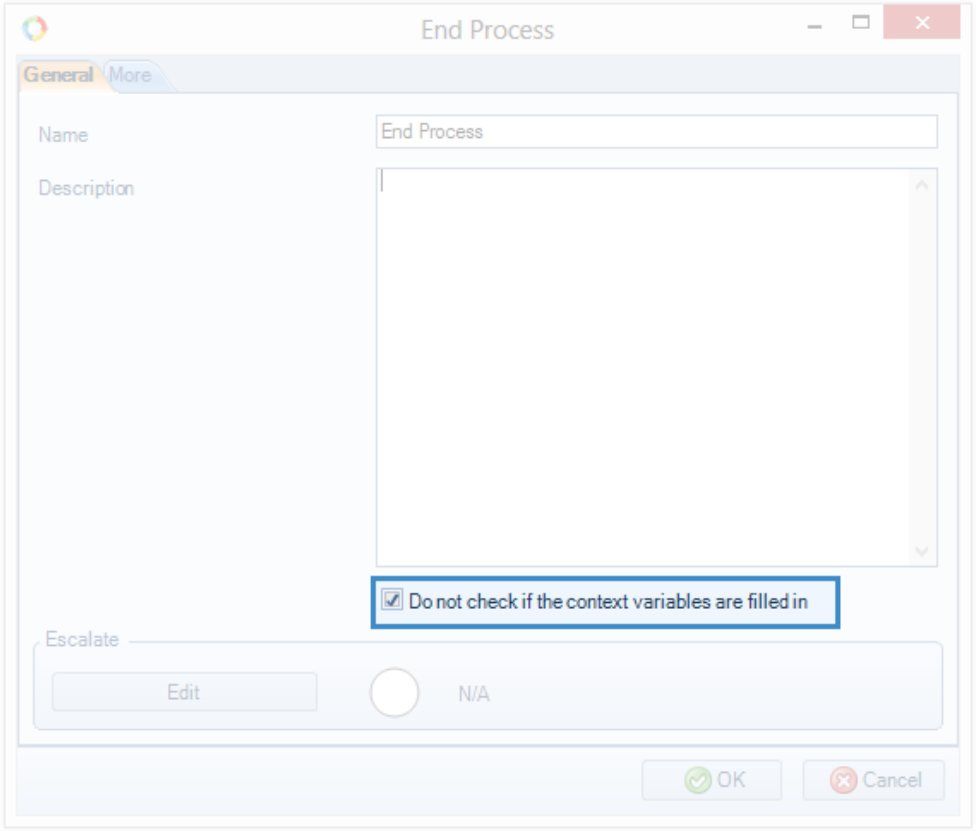


Fig. 64. Selecting option: Do not check if the context variables are filled in

The graphic model of the process now looks as follows (Fig. 65):

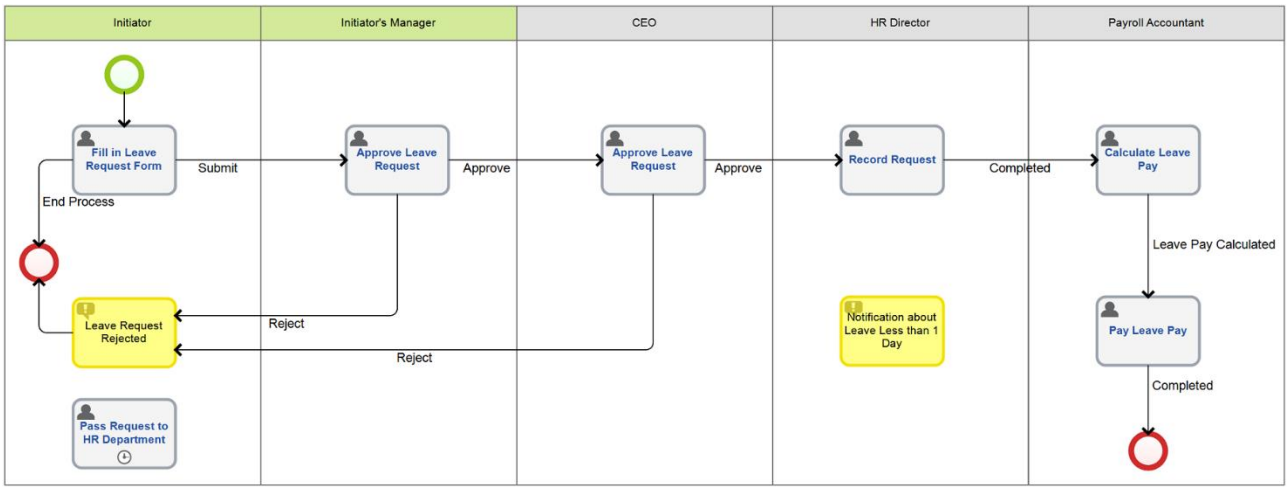


Fig. 65. The Leave Request process model with connectors

Now, fill the process with context values and select the context variables for the user tasks. You can configure later the outgoing connectors of the **Submit Request to HR Department** task and of the HR Director notification.

5.1.6. Business Process Context

The **business process context** is the information about the participants and contractors, data and standard document forms, executors' comments and other information created, edited, processed, transmitted, displayed or saved within the process.

In **ELMA**, the process context is a set of variables. A **context variable** is a minimum information unit of a certain type. There are two types of variables: simple variable - contains only one component; and compound variable - contains a set of fields or data block.

You can see the list of all the process context variables in **ELMA Designer** → **Process** → **Process List**→ **Context** tab (Fig. 66).

The process has two default variables: "**Process Instance**" and "**UID**". These variables cannot be edited, copied or deleted. In the context variable list, they are highlighted green.

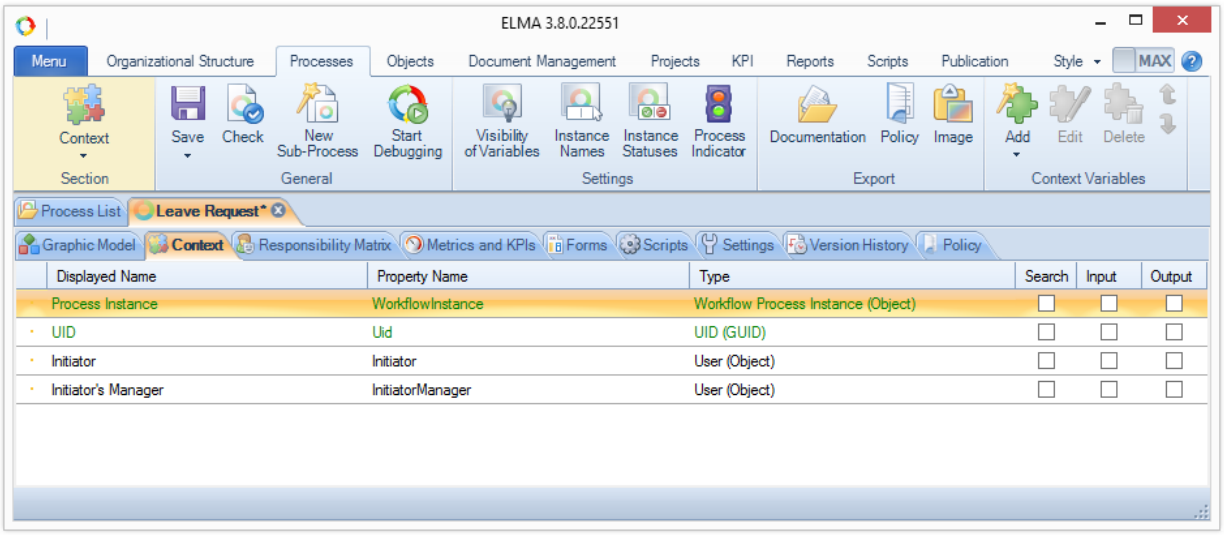


Fig. 66. Process context variables

You have already added the **Initiator** and **Initiator's Manager** variables when configuring the dynamic swimlanes.

By assigning different data types to variables, you can store numeric or string data, dates and objects in these variables.

Add new context variables in the **Context** tab or in the user task settings window. You can add or delete variables at any modelling/editing stage of the business process.

To add a new variable, click **Add** button on the toolbar or click anywhere on the screen and select **Add Property** in the drop-down menu (Fig. 68). The **Property Settings** dialog box will open (Fig. 69, Fig. 70).

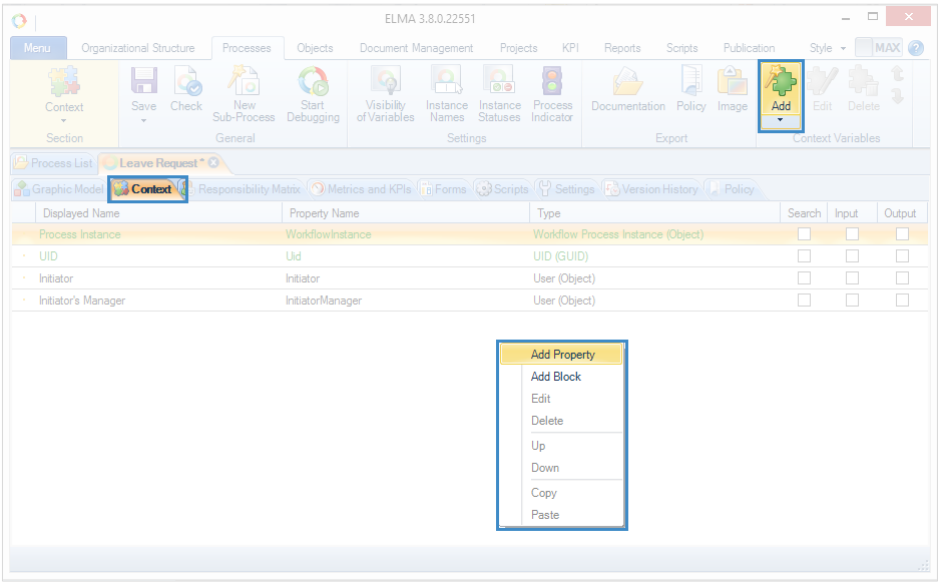


Fig. 68. Adding a context variable

Enter the variable name, select the type and specify the required parameters. The list of parameters depends on the type of the selected variable. For advanced settings open the **More** and the **Documentation** tabs of the **Property Settings** dialog box. However, normally you do not use this tabs when configuring variables.

Learn more about how to create and configure context variables in **ELMA Help**.

Click **OK** to save the information you have entered.

Now add and configure the following context variables for the **Leave Request** process:

Variable Name	**Type**
Leave Type	In the **Type** field, select **Drop-Down List**. In the **List Elements** field type: Unpaid Leave and Regular Paid Leave. Choose the **Select from list only** option. Select the default value. In the **Description** field, add a comment with the leave type description. (Fig. 69).
Request Text	In the **Type** field, select **Text**
Start Date	In the **Type** field, select **Date/Time**, show only **date** (Fig. 70)
End Date	In the **Type** field, select **Date/Time**, show only **date**
Manager's Comment	In the **Type** field, select **Text**.

	In the **Description** field, add a comment "Required to fill in if rejected"
Director's Comment	In the **Type** field, select **Text**. In the **Description** field, add a comment "Required to fill in if rejected"
Leave Pay Amount	Fraction

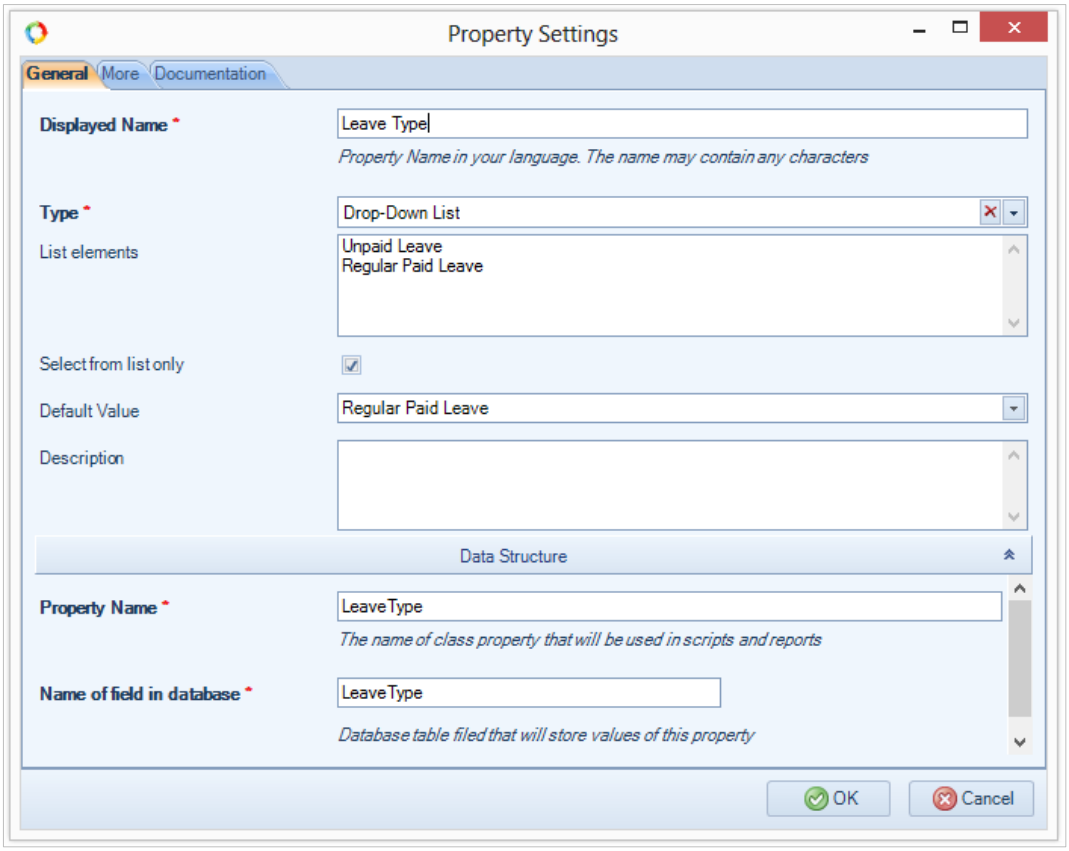


Fig. 69. Configuring the variable, type: Drop-Down List

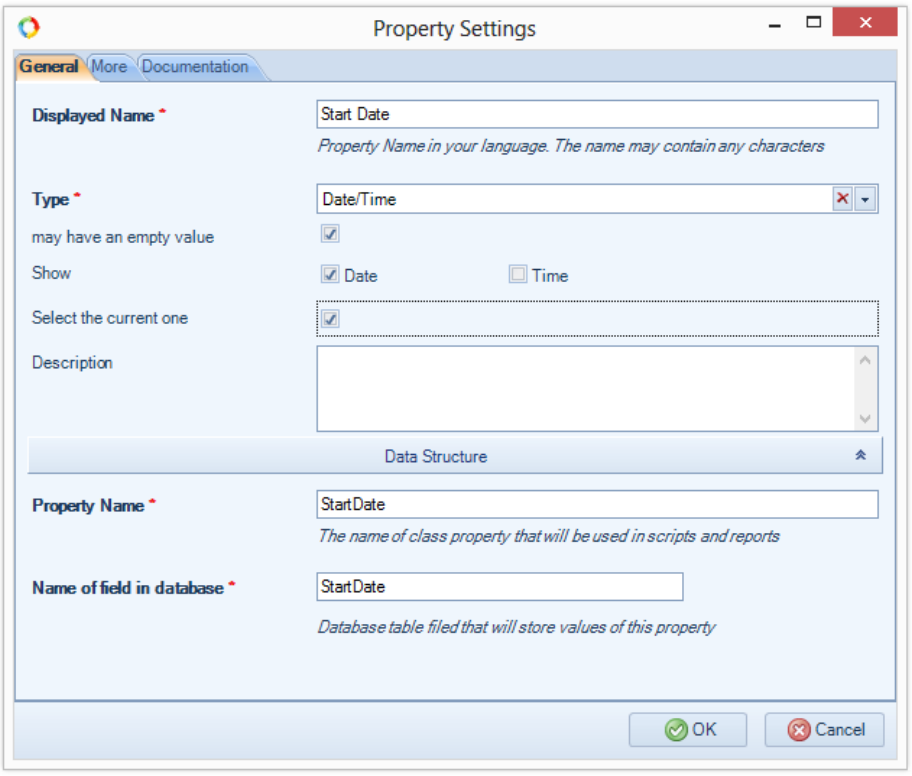
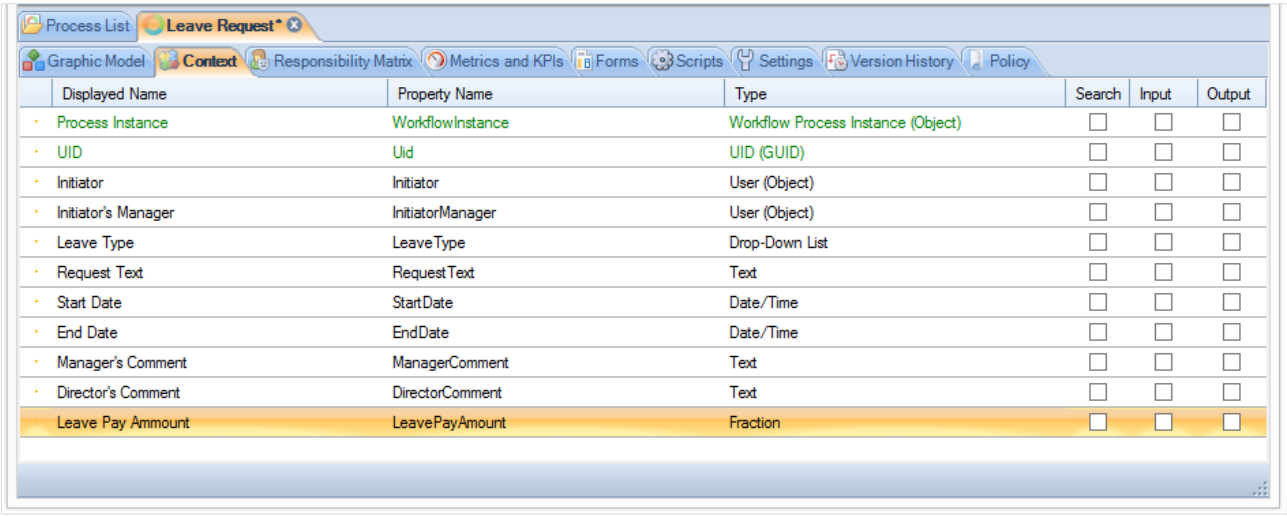


Fig. 70. Configuring the variable, type: Date/Time

Now the **Context** tab of the **Leave Request** process looks as follows (Fig. 71):



Displayed Name	Property Name	Type	Search	Input	Output
Process Instance	WorkflowInstance	Workflow Process Instance (Object)	☐	☐	☐
UID	Uid	UID (GUID)	☐	☐	☐
Initiator	Initiator	User (Object)	☐	☐	☐
Initiator's Manager	InitiatorManager	User (Object)	☐	☐	☐
Leave Type	LeaveType	Drop-Down List	☐	☐	☐
Request Text	RequestText	Text	☐	☐	☐
Start Date	StartDate	Date/Time	☐	☐	☐
End Date	EndDate	Date/Time	☐	☐	☐
Manager's Comment	ManagerComment	Text	☐	☐	☐
Director's Comment	DirectorComment	Text	☐	☐	☐
Leave Pay Ammount	LeavePayAmount	Fraction	☐	☐	☐

Fig. 71. The Context tab with specified variables

Define the information that will be available for each user task. Open the **Graphic Model** tab of the process.

Configure the first task settings (The **Fill in Leave Request Form** task). To do this, double click on the task → task settings window opens → go to the **Form (Context)** tab (Fig. 72).

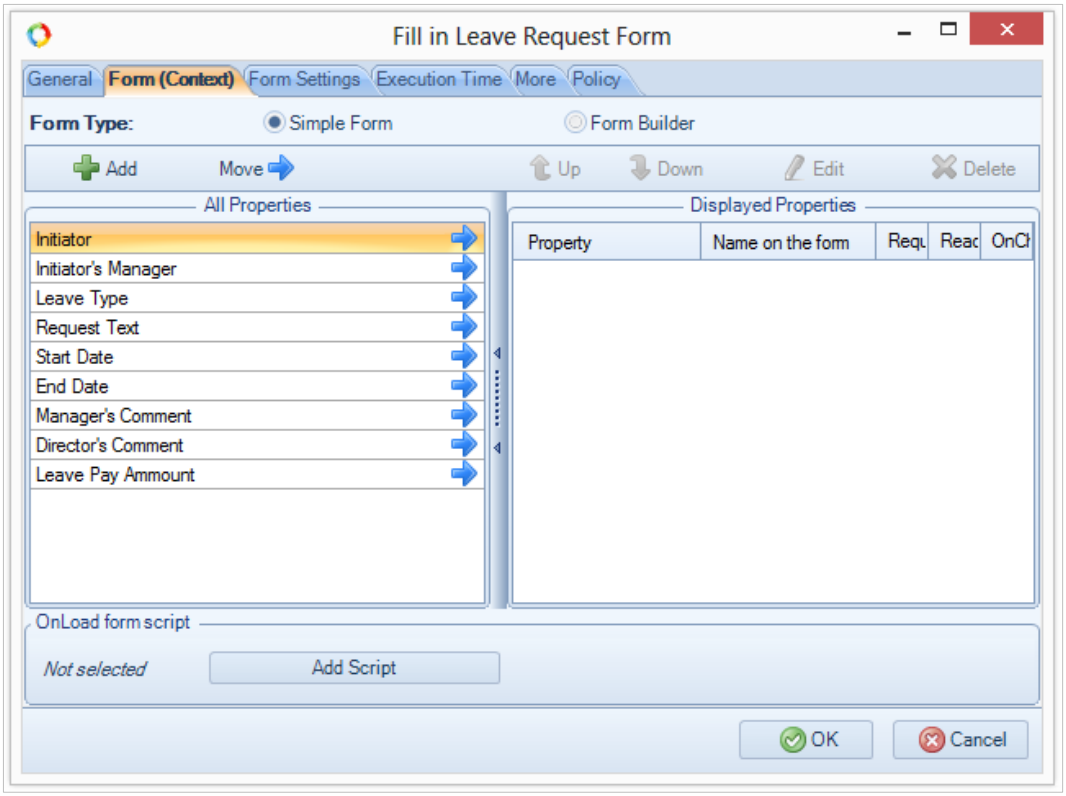


Fig. 72. The Form (Context) tab of the task

The tab contains two lists: **All Properties** and **Displayed Properties**. The **All Properties** list shows all the process context variables; you created this list on the **Process Context** tab (Fig. 72). The **Displayed Properties** list contains the variables that the users will see when this task is assigned to them.

Each variable has three display modes:

- **Required** – check the **Required** box next to the variable name to choose this option;
- **Read Only** – check the **Read Only** box next to the variable name to choose this option;
- **OnChange value script** – check this box if you have not selected any of the above options.

If the variable is marked as the **Required** field, you will not be able to complete the task until you fill in the respective field in **ELMA Web Application**.

The **Read Only** option forbids anyone from making any changes to the variable. The users receive task data for informational purposes only.

For the **Fill in Leave Request Form** task move the required proprieties from the **All Proprieties** list to the **Displayed Proprieties** list and select the display options (Fig. 73).

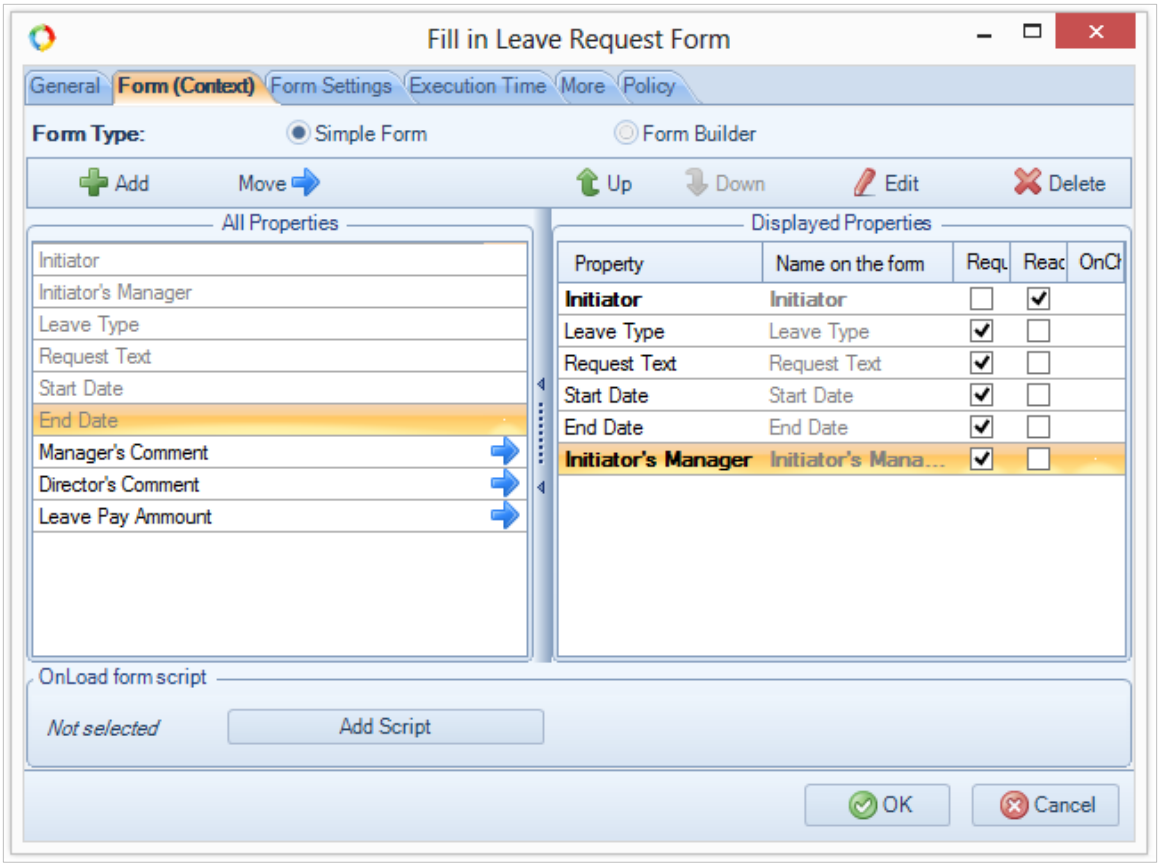


Fig. 73. Configuring displayed task properties

You can change the context variable name on the task form for each task: change the **Name on the form** attribute of the context variable. E.g., change the displayed property of the **Initiator** context variable. To open the property settings double click on the property name in the right column. Enter the new name into the **Name on the form** field, (for example, **Employee's Full Name** (Fig. 74)) and click **OK** to save the changes.

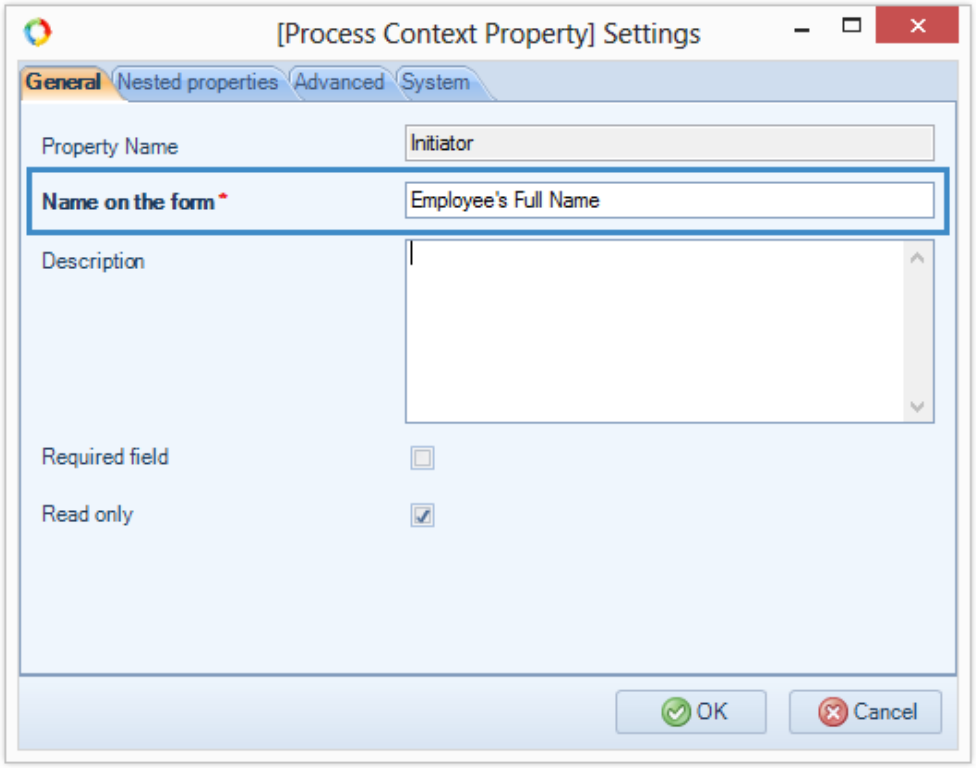


Fig. 74. Editing the displayed name of the context variable on the task form

For the **Read Only** variables, the task form can contain not only the variable name, but the variable proprieties as well. E.g., for the **User** variable, the task form can show such proprieties as Positions, Office Phone, E-Mail, etc. You can find all available properties in the **Nested Properties** tab when you configure the variable (Fig. 75).

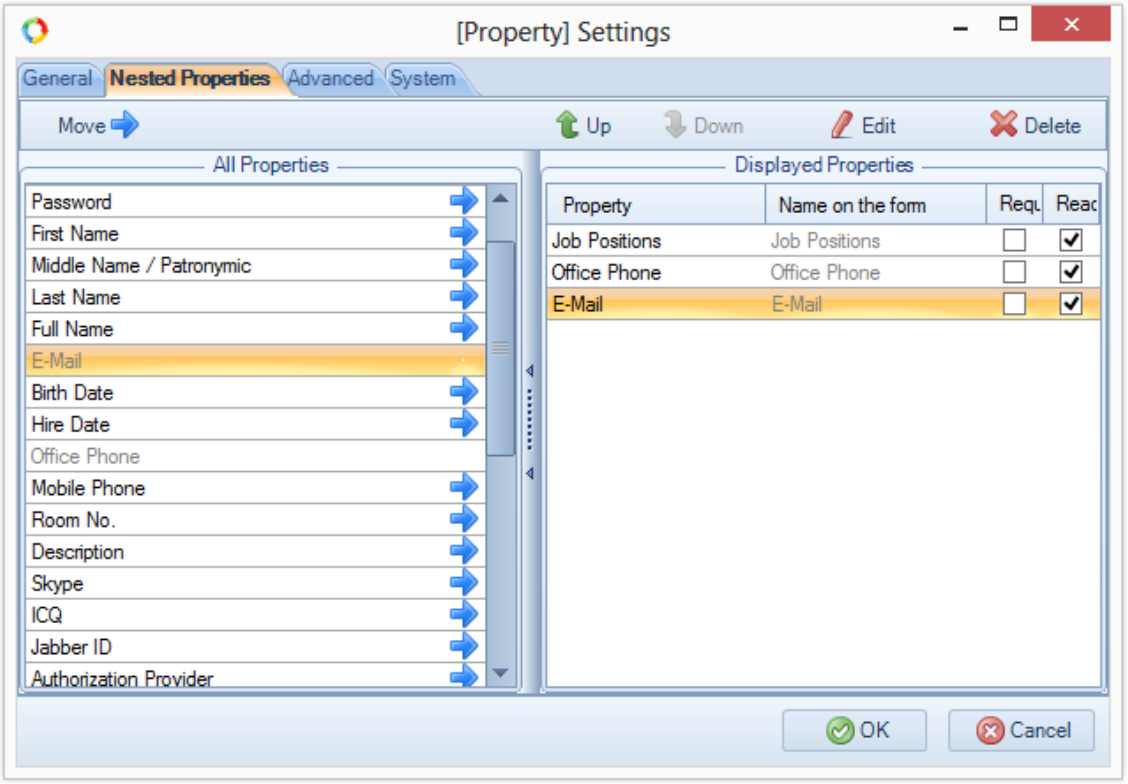


Fig. 75. Configuring a property in the Nested Properties tab

Likewise, specify context variables for all the user tasks of the process.

Select variables for the **Fill in Leave Request form** task and mark them as **Required**. Then add the same variables to the Manager and CEO approval task forms: but now you must mark them as **Read Only**. After that, add the **Manager's Comment** and the **CEO's Comment** variables to the respective approval task forms and mark them as **Required**. For the **Approve** connectors that go out of these tasks select **Do not check if the context variables are filled in**. Such settings allow the Initiator's Manager and CEO to leave the comment field blank, but the approvers must explain their reasons if they reject the request.

Add all the process variables to the HR Director's task and mark them as **Read Only**. In the same way, configure the Initiator's **Submit Request to HR Department** task.

For the Accountant's **Calculate Leave Pay** task, select all the previous variables. Add the **Leave Pay Amount** variable and mark it as **Required**. Now to complete the task the Accountant will have to fill in this field in the task form. For the **Pay leave pay** task mark all the context variables as **Read Only**.

After you have configured all the user tasks and connectors, proceed with the notifications. Make the in-process messages to the user more informative: configure the message text template.

Open the settings window of the notification that the Initiator will receive if the leave request is rejected. Go to the **Notification Template** tab. When you put the cursor over the **Subject** or **Message Text** fields, the **Data** button becomes active. Use it to select the context variables and insert their values or their string/numeric properties into the message.

E.g., to insert the Initiator's full name, click **Context** → **Initiator** → **Full Name**; to insert the Manager's comment, click **Context** → **Manager's Comment** (Fig. 76).

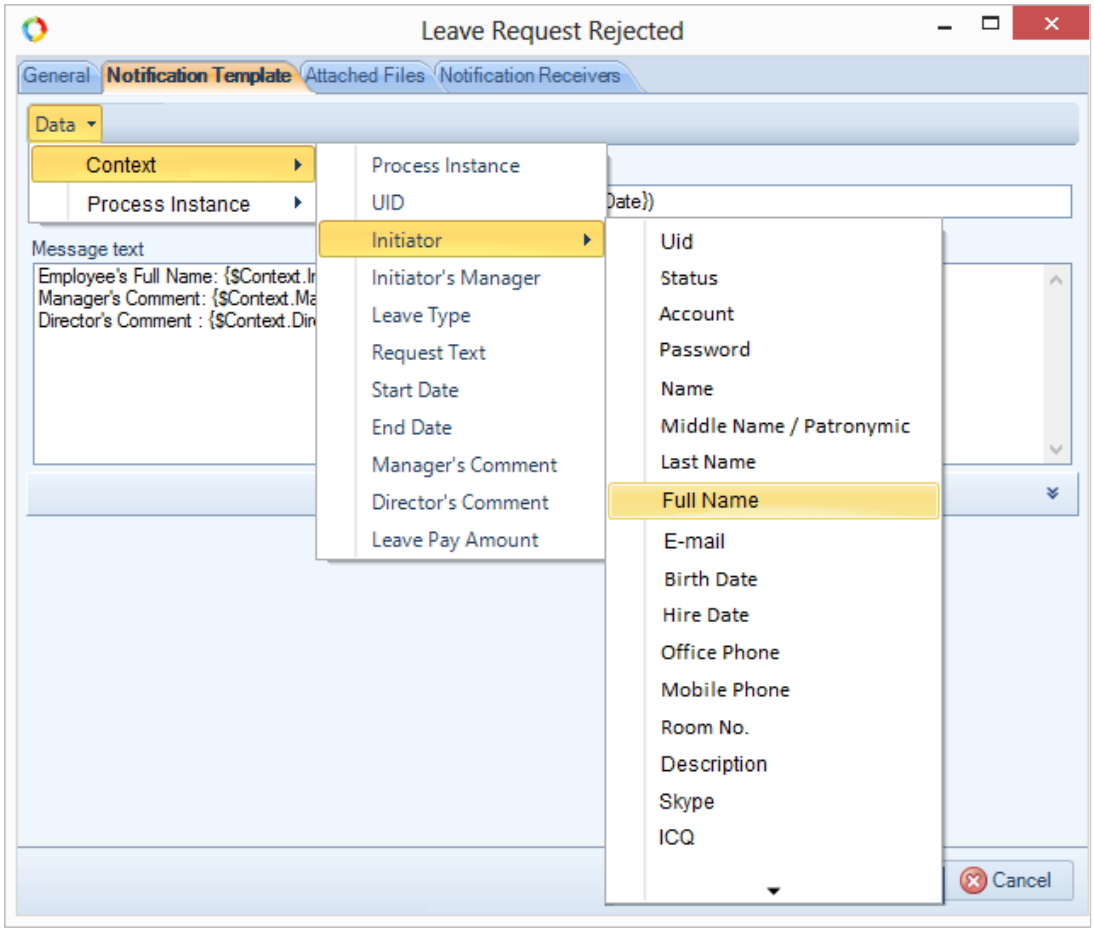


Fig. 76. Configuring the notification template

ELMA will generate the text blocks enclosed in curly brackets { }. When sending a message, the system will use these text blocks to fill in the respective message fields (Fig. 76).

Customize the template for the notification as follows:

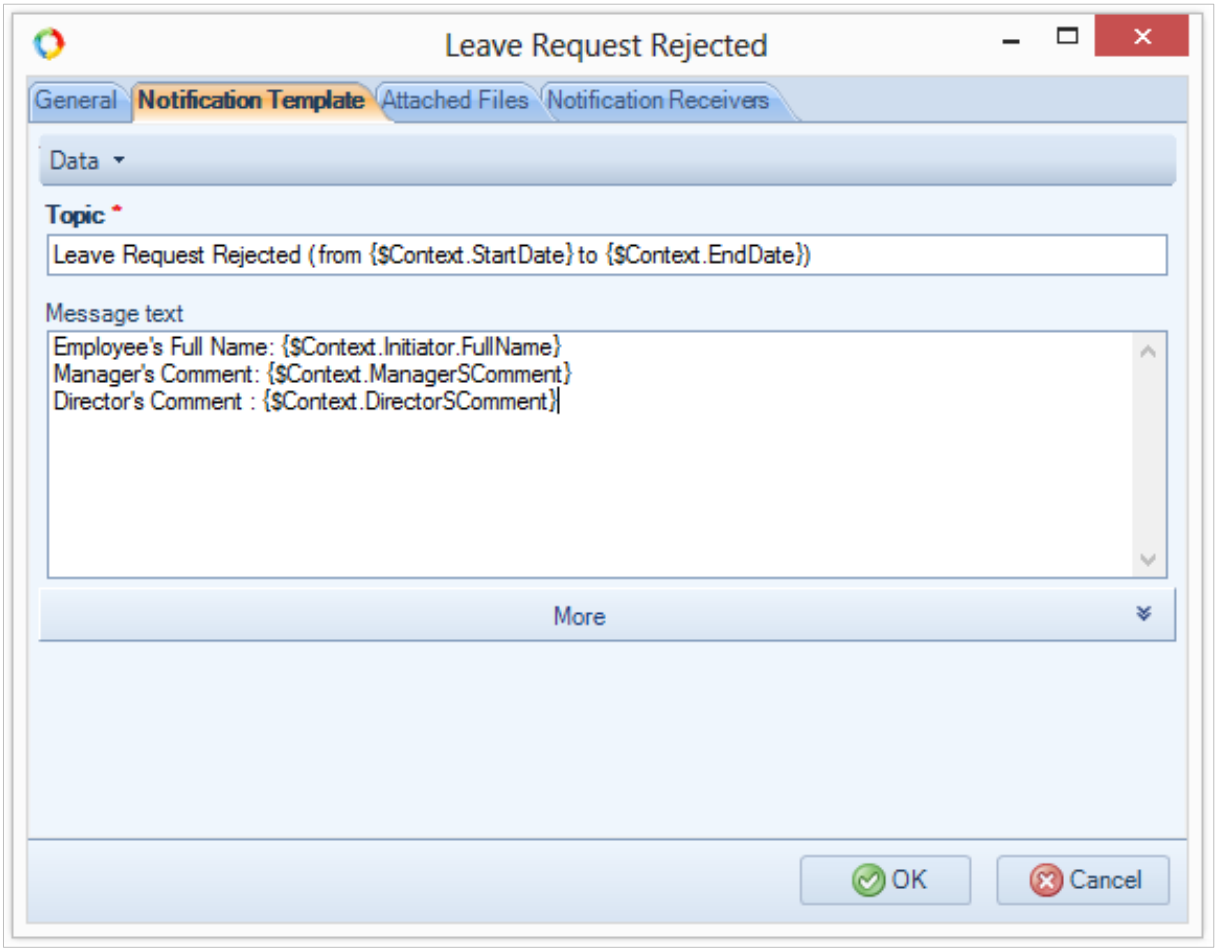


Fig. 77. An example of notification template

Likewise, customize the template of the **Notification on Leave Less than One Day** that will be sent to the HR Director.

Since this process can follow two different paths (depending on the duration of the leave), you need to use a **Gateway** to allow multiple outgoing flows.

5.1.7. Gateways

When you design a process model, you often need to use conditions. A condition is a filter that checks if some equation is true or false and automatically chooses one of the process paths.

In ELMA, you can use three types of gateways to check conditions.

Exclusive Gateway (**XOR**) is a point in the process where only one of the outgoing paths of the process can be selected. Each outgoing connector specifies the condition under which the process follows this path. If the

conditions for several outgoing paths are satisfied, the process follows the path marked as "default". Every **XOR gateway** needs a default path.

OR Gateway activates all the outgoing paths for which the conditions are satisfied. All the outgoing paths from the OR gateway must go to a similar OR gateway.

Parallel Gateway (**AND**) activates all the outgoing paths. Use this gateway to create parallel flows. All the flows going out of a parallel gateway must go to a similar parallel gateway.

Learn more about gateways in **ELMA Help**.

Add an **XOR gateway** to the **Leave Request** process model to create different outgoing paths depending on the leave duration.

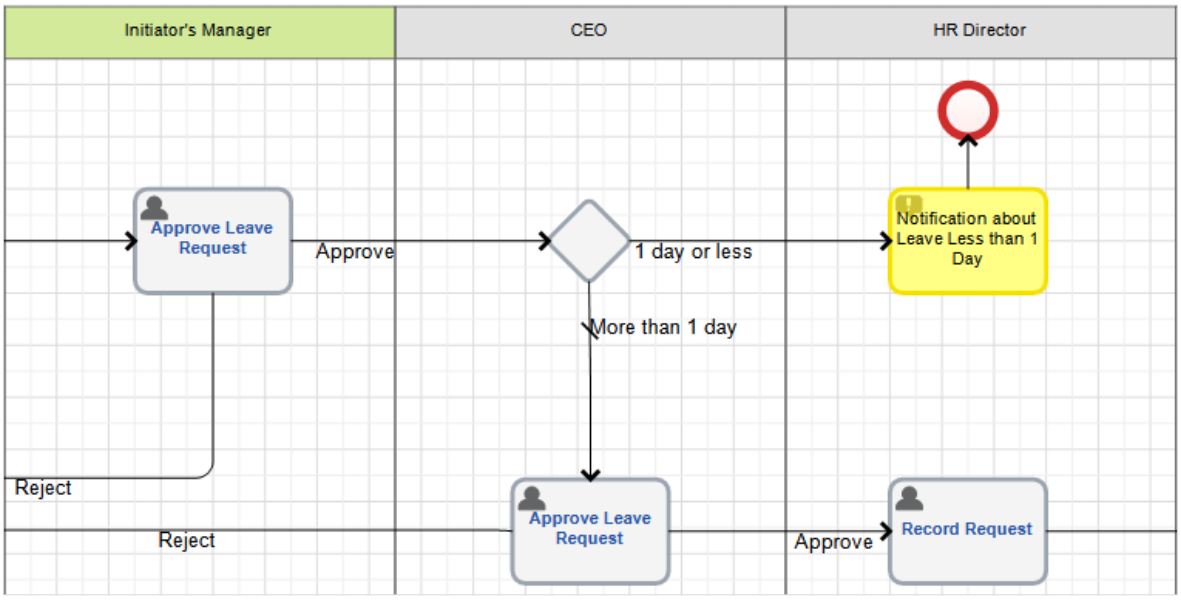


Fig. 78. XOR Gateway

Suppose the start and the end date of the leave are the same, so the leave takes one day or less. Configure the connectors from the **XOR gateway**. Specify the condition for the **One day or less** connector (Fig. 79) and mark the **More than 1 day** as the default connector. In the gateway settings, specify the condition check order (Fig. 80).

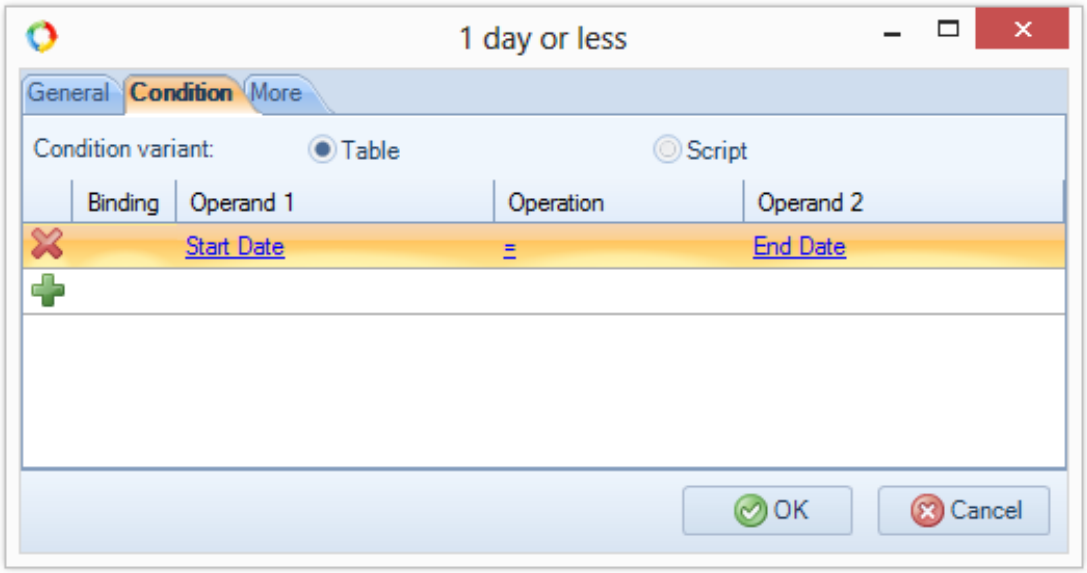


Fig. 79. Configuring XOR gateway outgoing connector

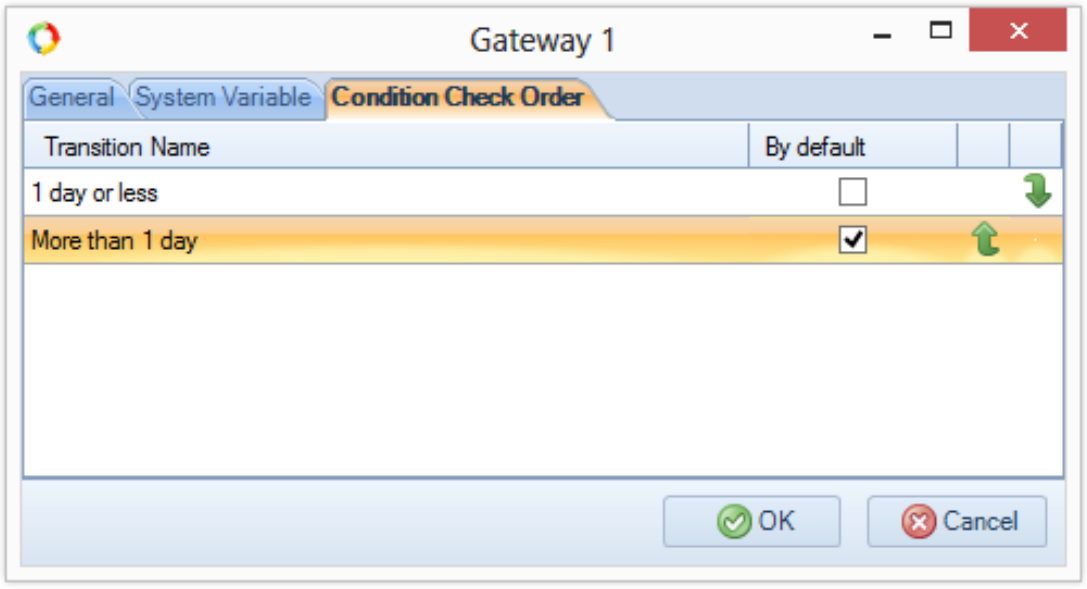


Fig. 80. Configuring the condition check order

According to the process description, the accountant must execute the **Calculate Leave Pay** task only in case of **Regular Paid Leave.** Therefore, create two process paths using the exclusive **XOR gateway**.

Configure the **Paid Leave** connector. Double click on the **Paid Leave** connector → **Transition Condition** tab opens → in the **Operand 1** column select **Leave Type** context variable. To set a condition in the **Operand 2** column, click the **Not defined** link and select **Change Value**.

The **Enter Your Value** window opens. Select the **Regular Paid Leave** (Fig. 81). Click **OK** to save the changes.

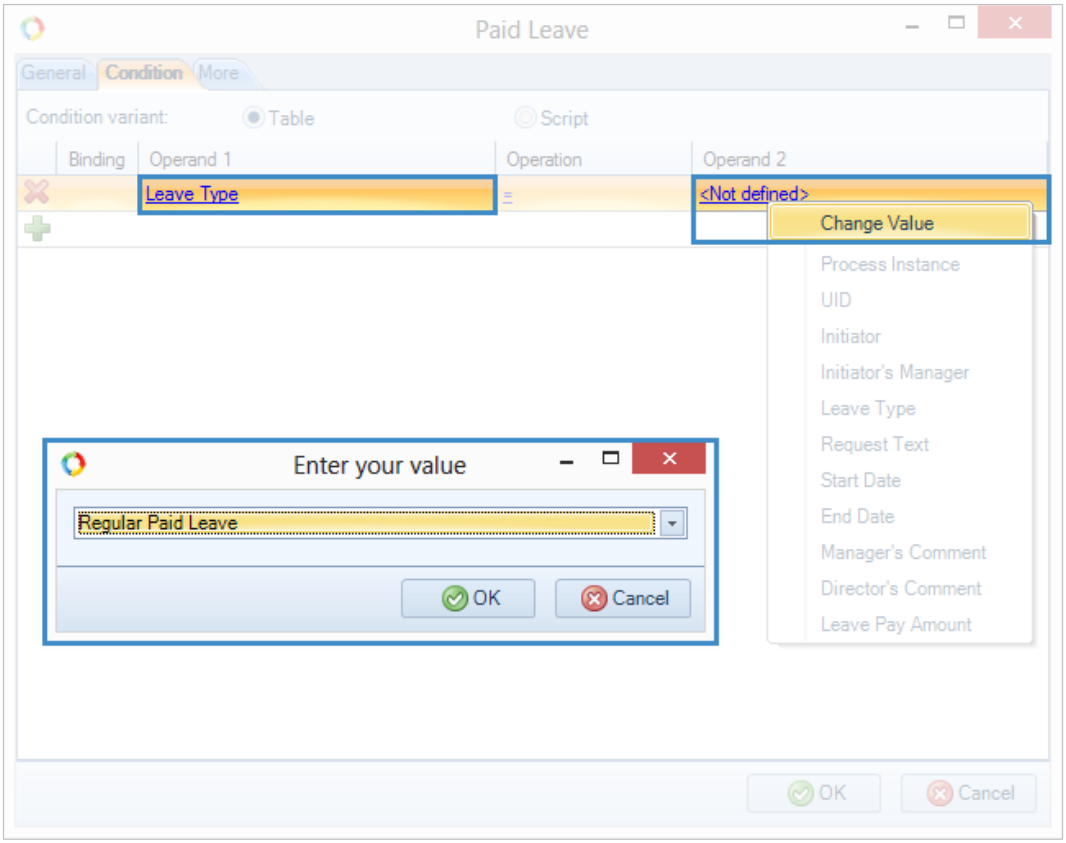


Fig. 81. Configuring the gateway connector

In a similar manner configure the **Unpaid Leave** connector; select another **Leave Type** and mark it as the default path.

The **Submit Request to HR Department** task and the **Calculate Leave Pay** task must be executed in parallel. Create parallel process paths using a **Parallel Gateway.**

Now, the graphic model of the process is more complex and it looks as follows (Fig. 82):

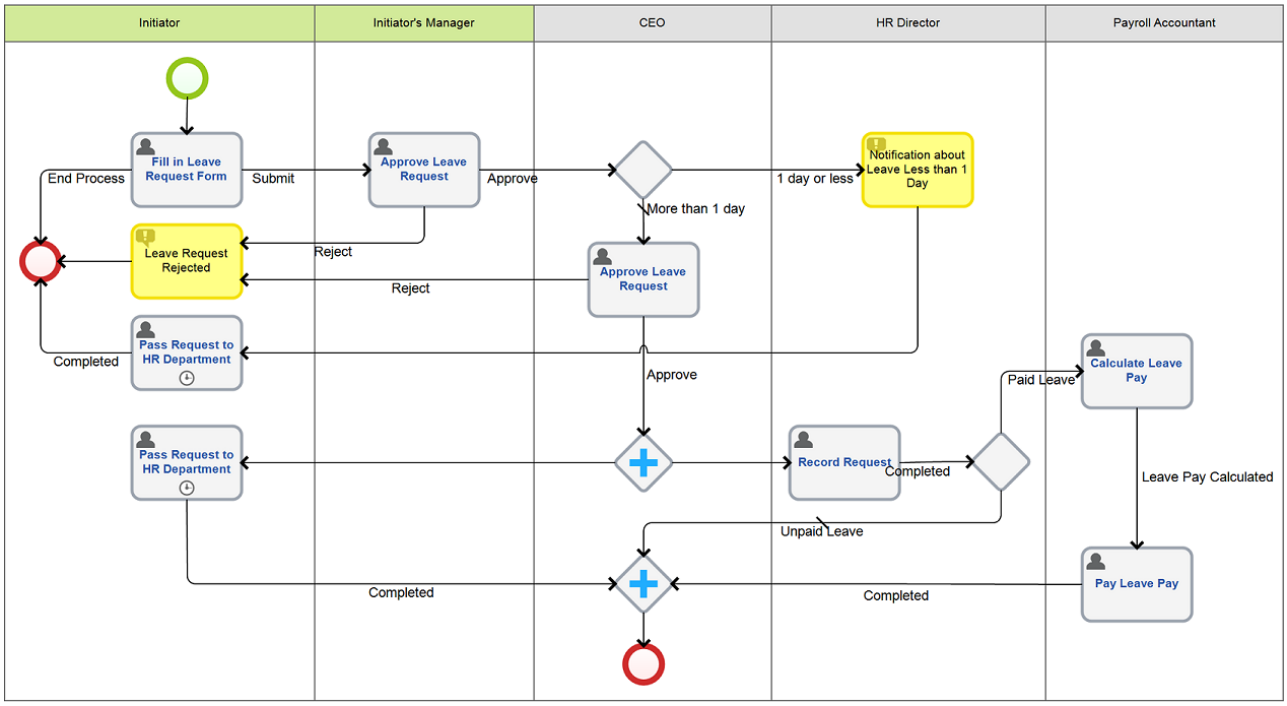


Fig. 82. The graphic process model with gateways

In **ELMA**, the process model must contain two parallel gateways, as all the paths going out of the parallel gateway must go to a similar parallel gateway. Due to this constraint, add a duplicate **Submit Request to HR Department** task to the Initiator's swimlane.

5.1.8. Responsibility matrix

After you have configured the graphic model and the context of the process, you can configure the **Responsibility matrix**. Open **ELMA Designer** → **Processes** → **Process List** → **Responsibility matrix** tab (Fig. 83). This tab shows the participants' permissions.

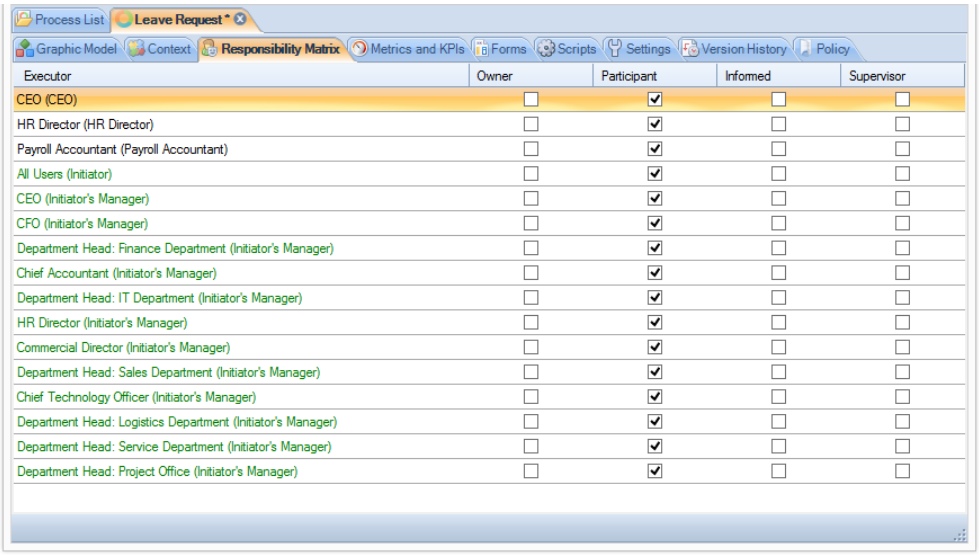


Fig. 83. The Responsibility matrix of the Leave Request process

Next to the name of the organizational structure element or the user group, you can see the name of the respective swimlane (in brackets). The participants represented by the dynamic swimlanes are marked green. This list can also include the users not related to any swimlane and having no tasks within the process.

Check the relevant boxes to select a user role:

An **owner** is a user fully responsible for the entire process. This means that the owner is responsible not only for the result (product) of the process, but also for the process progress and the customer's satisfaction. Select the owner from the executors of the tasks or add manually from the organizational structure. Every process can have only one owner.

A **participant** is an executor of the tasks placed in the respective swimlane. This is a default role for all the task executors of the process.

An **informed** user receives information about the process progress outside the system. This user does not interfere with the process in **ELMA**; however, the process documentation and regulations contain information about the informed user.

A **supervisor** is a user whose job is to monitor the execution of the process. The supervisor can view the process details. Usually, the supervisor is one the company's executives. The number of supervisors is not limited.

Now, mark the HR Director as the owner of the **Leave Request** process and the CEO as the **Supervisor**. The other users remain **Participants**.

5.1.9. Checking Business Process

After you have designed the process model, you can check if it has logic errors; you can also check if the process scripts have syntax errors (see **ELMA Help**).

Possible logic errors are: missing start/end event, missing connectors between the flow objects, wrong gateway logic, swimlane errors. **ELMA** automatically checks the process before publishing. To start the check manually click **Check** on the toolbar (Fig. 84).

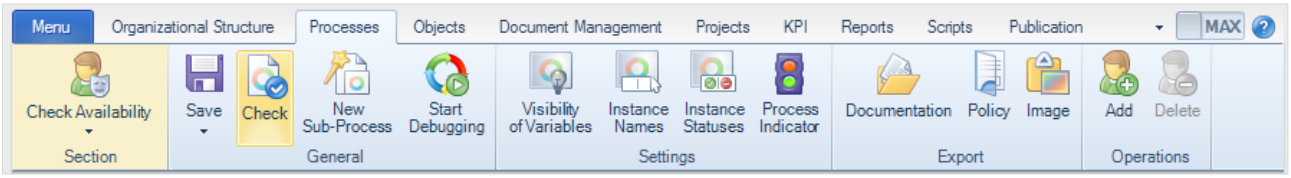


Fig. 84. The Check button on the process page toolbar

If you have designed the process model correctly, a notification appears informing you that the process model is correct.

If the graphic model contains errors, **ELMA** will highlight the supposedly erroneous elements and provide a list of errors on the **Errors and Warnings** panel (Fig. 85). You cannot start the erroneous process.

Use the **Check** button to verify if the graphic model is designed correctly. However, the correct graphic model does not guarantee that the process will be executed without errors.

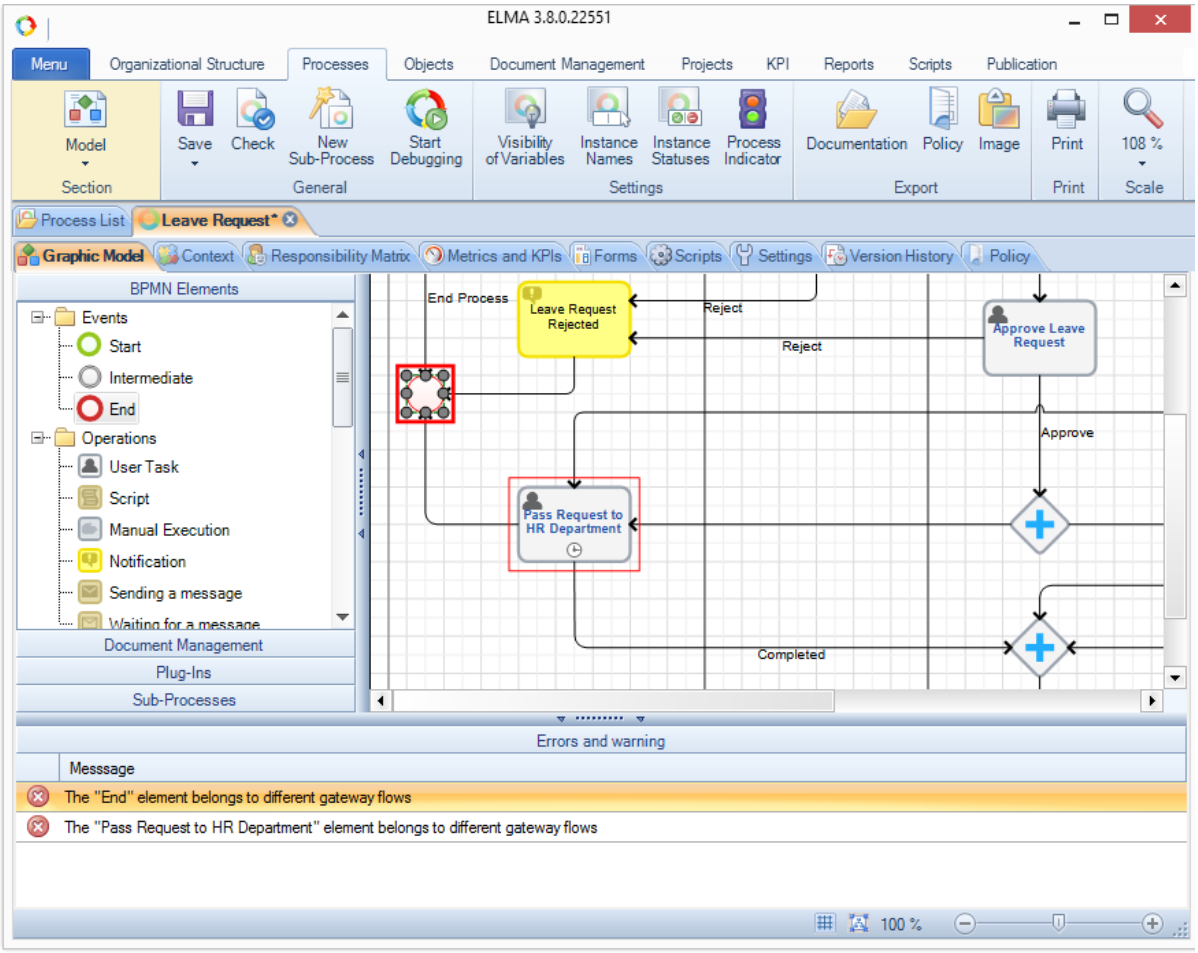


Fig. 85. The Errors and Warnings panel

5.1.10. Debugging the Business Process

After you have checked the process model and before you start the process, it is recommended to debug it.

Process Debugging means that the system checks how the process is executed with different values of context variables. You can start debugging only after you have checked the process. Strat debugging in **ELMA Designer**, to perform debugging the system will open **ELMA Web Application**.

In the debugging mode, the system emulates the process execution in **ELMA Web Application**. Users who started the debugging (usually, ELMA Administrator) can see all the process tasks in their locally installed **ELMA**. It is a convenient feature that allows you to execute all the process tasks, and, therefore, monitor each step of the process.

To start the process debugging, click **Start Debugging** in the toolbar (Fig. 86).

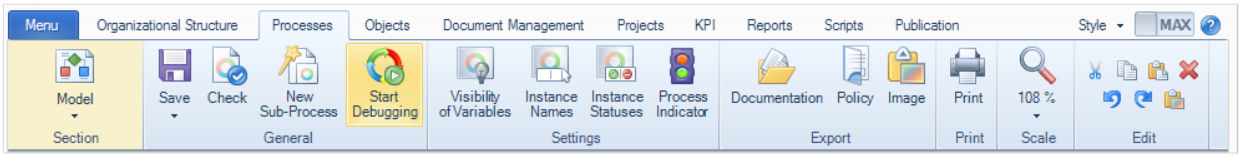


Fig. 86. The Start Debugging button starts the process emulation from the first operation

To start the process debugging from a specific operation, click **Start Process Debugging** (Fig. 87).

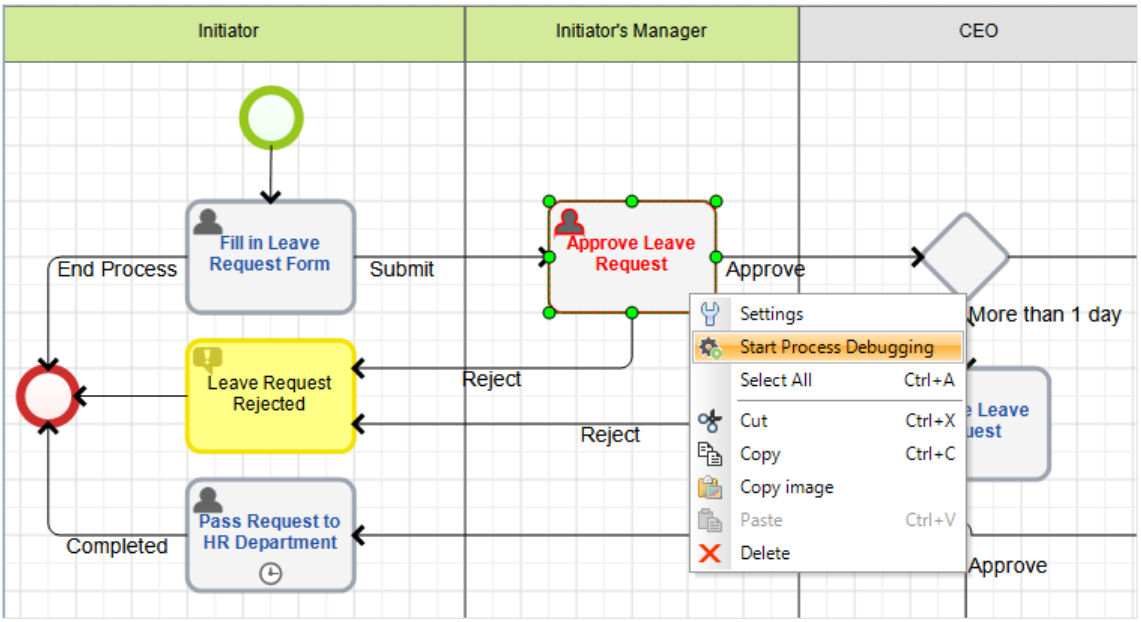


Fig. 87. Starting process emulation from a specific operation

After that, the debugging start form will open in a new browser window/tab (Fig. 88). Make sure that in **ELMA General Settings** you have correctly specified the **Basic System URL** and the port for **ELMA Web Application** connection.

At this stage, the debugging process has not yet started and no changes are made to the system and the database. You can close this browser tab without any consequences for the system and the database.

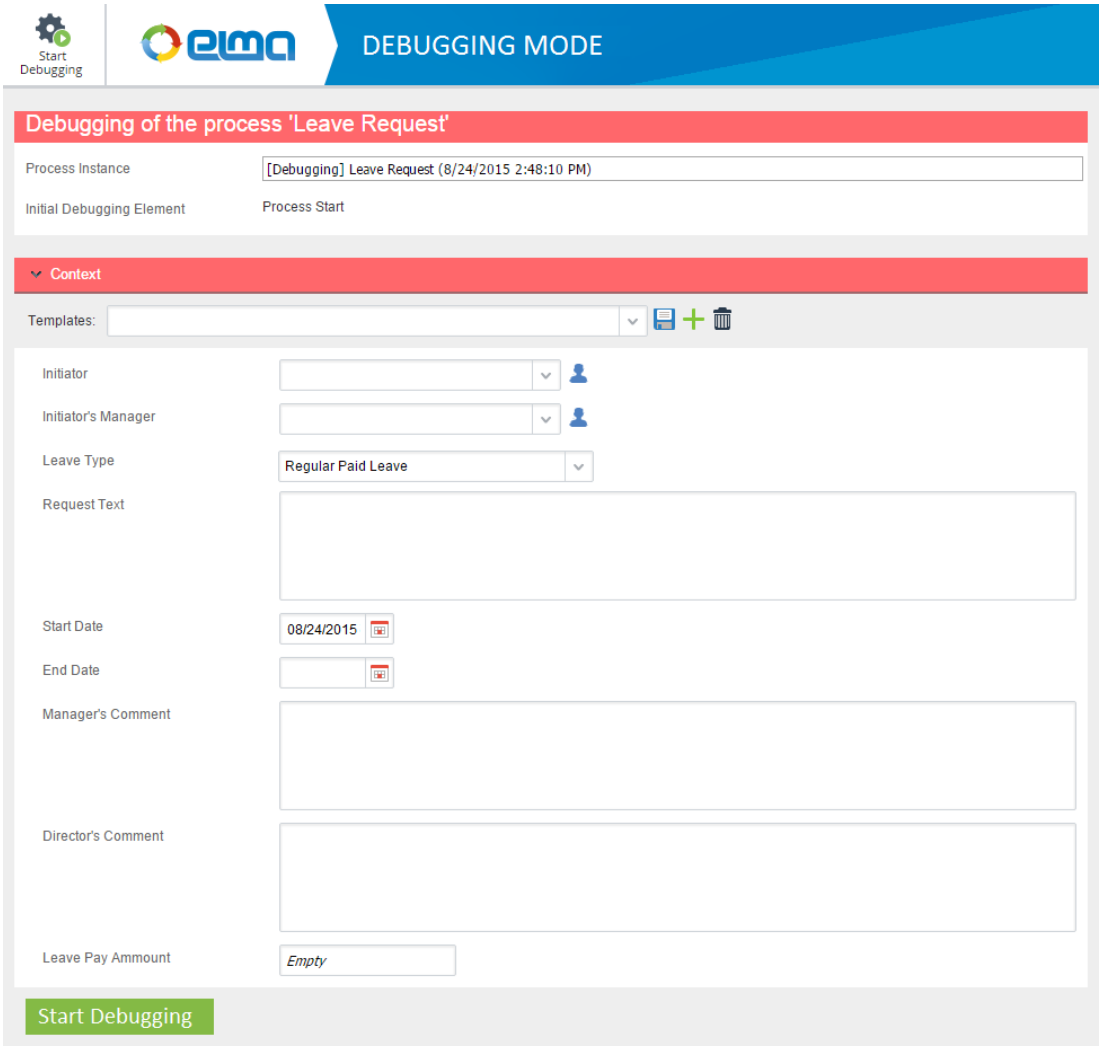


Fig. 88. The debugging form

To start debugging click the **Start Debugging** button at the top or the bottom of the page. After that, the process debugging window will open (Fig. 89).

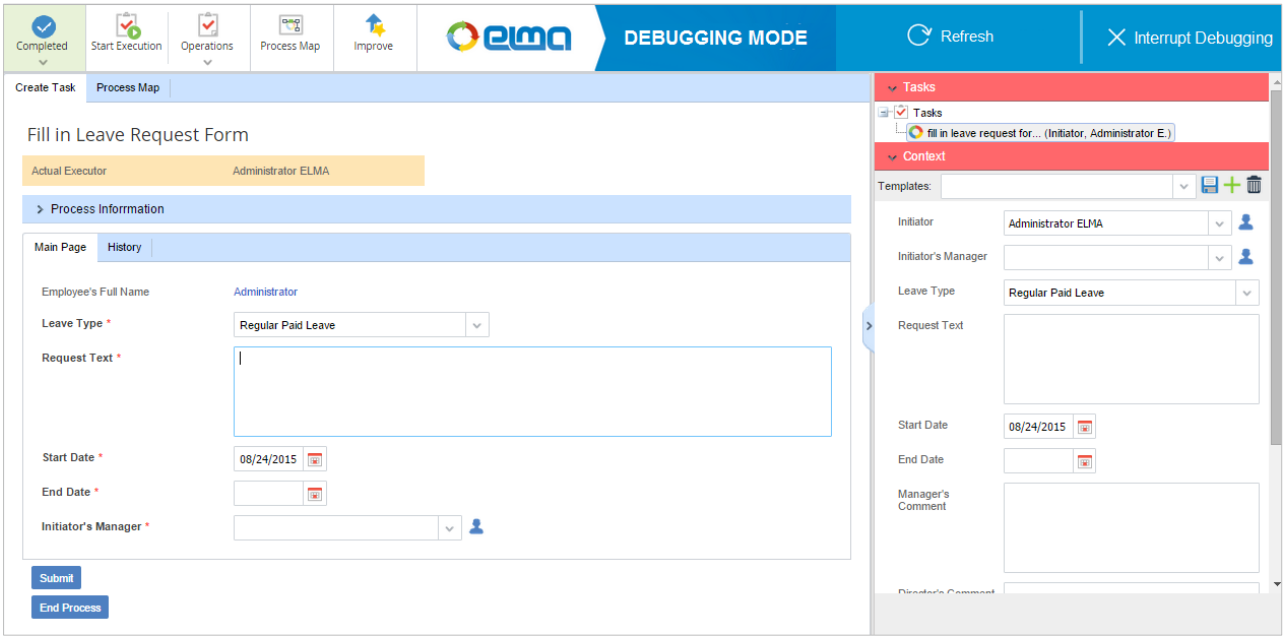


Fig. 89. Process debugging window

In the left side of the window, you will see the form of the process current task; when the users actually work with **ELMA Web Application,** they will see similar task form. On the right side, you will see the debugging controls.

The **Tasks** area contains the list of all the current process tasks. If you have several current tasks, you can switch between them. To do this, click the task name displayed in this area.

On the right side of the window, in the **Context** area, you can change the current values of the context variables. To apply the changes click **Update Form** in the top right corner of the debugging window. **ELMA** will use the new variable values until you change them in the process activities settings or manually in the **Context** area.

You can stop debugging at any time: click **Cancel Debugging** in the upper right corner of the process debugging window.

5.1.11. Publishing Business Processes

After you have designed, checked and debugged the business process you can publish it. **ELMA Web Application** cannot execute a process saved in **ELMA Designer** until it is published.

You need to publish a business process:

1. When you create a new process. Until the process is published, the users will not be able to work with it in **ELMA Web Application**.

2. When you edit the existing process. Publish the process to apply all the changes you have made since the previous publication.

When starting a new process instance, **ELMA** uses the most recent published version of the process. **ELMA** will continue executing all the active instances in accordance with the previous process version, which was available at the time the instances were started.

To publish the process, in the process window→ click the lower part of the multi-functional **Save** button → the context menu will appear → click **Publish**.

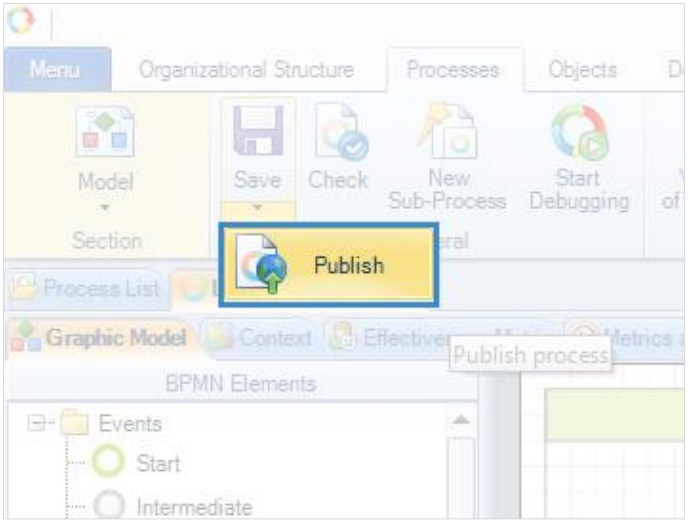


Fig. 90. The Publish button on the process toolbar

Process publication window will open. There you can see the process version number and the process start options. You can also enter a brief description of the new version's features. This comment will be displayed it the process versions history, in the **Comments** column. Click **OK** to start publication.

The process publication will take some time. After it is complete, you can start the business process in **ELMA Web Application**.

5.2 Executing Business Process

After you have modelled and published the business process, **ELMA Server** can “execute” it.

To execute a business process means to sequentially create tasks and to execute them in accordance with the Business Process Model.

Start business processes in **ELMA Web-Application.**

5.2.1. Starting Business Process

A user who has the respective permissions according to the process graphic model can start the process in **ELMA Web-Application**. This user is represented by a swimlane with the start event.

In the **Leave Request** process, the swimlane with the start event is a user who is a member of the “All users” group, i.e. any **ELMA** user.

To start the process you can use one of the following methods.

The first method. On the main page, in the toolbar click **Start process** button (Fig. 91). In the window that appears (Fig. 92), click on the process you want to start.

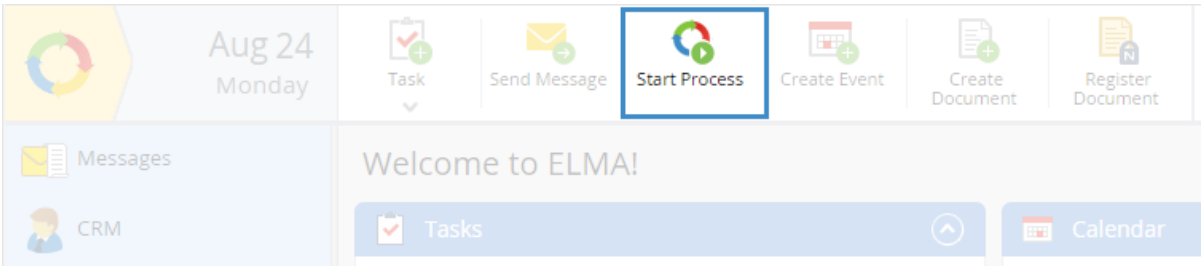


Fig. 91. The Start Process button on the main page of ELMA Web-Application

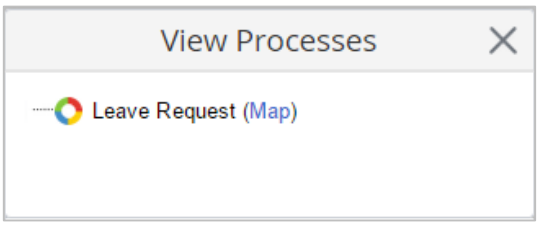


Fig. 92. Process selection window

All processes that you can start will be available in the **process selection window**.

The second method. In the main menu, click the **Start process** button (Fig. 93). In the window that appears (Fig. 92), click on the process you want to start.

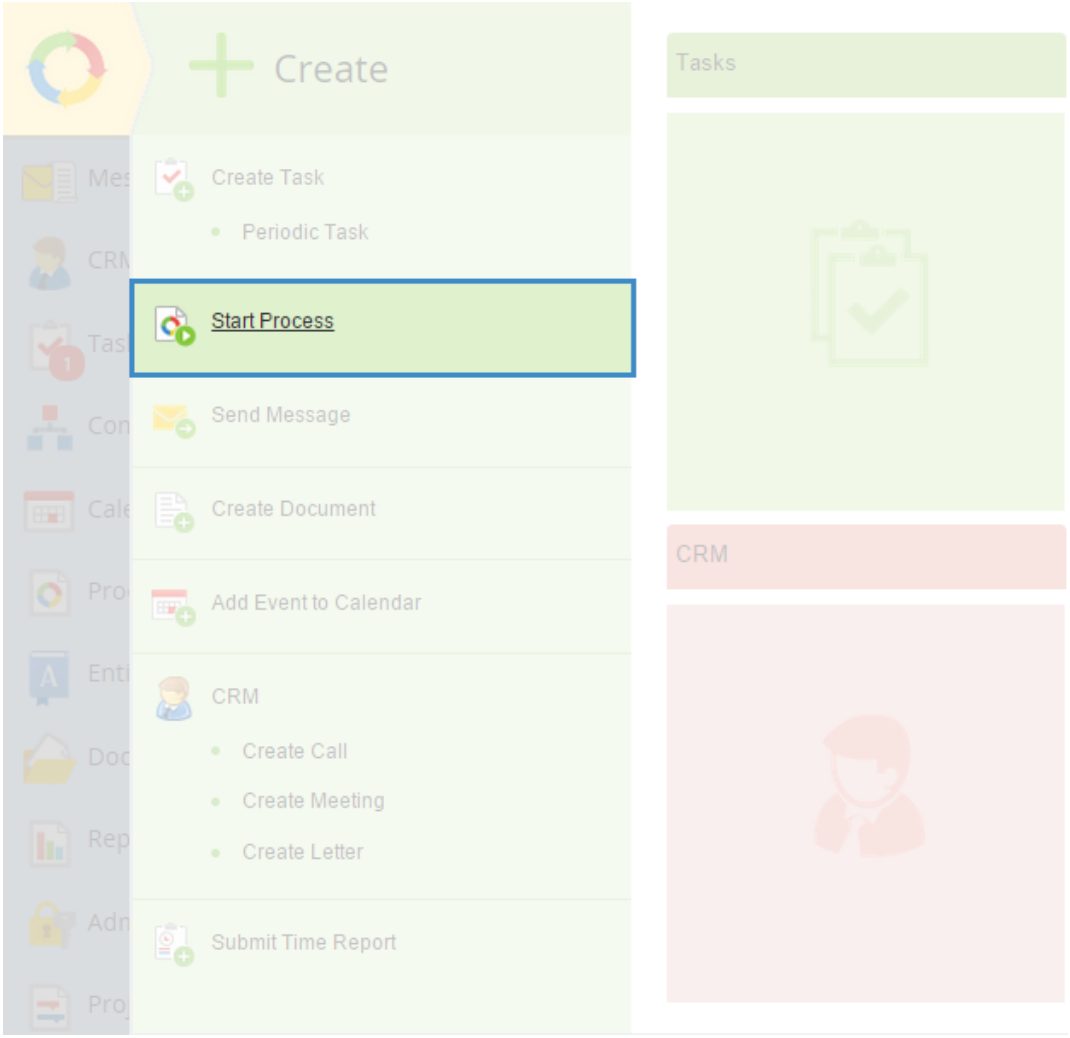


Fig. 93. Starting a process from the main menu

You can also add the **Start Process** portlet (Fig. 93) to the main page of the **Web Application** (Fig. 94):

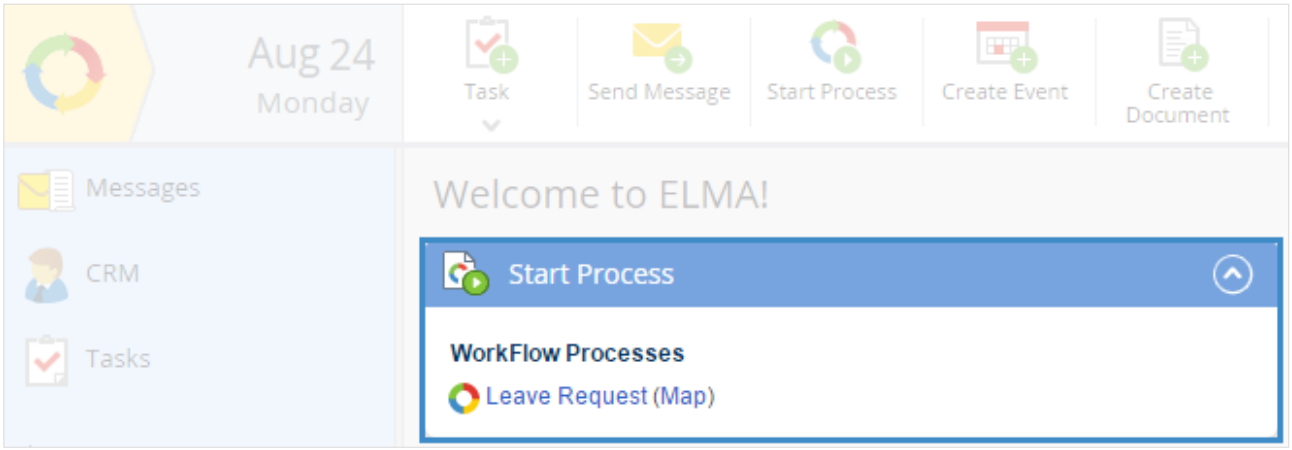


Fig. 94. Start Process Portlet

Before starting the process, you can review the process map - it will open in a new browser tab. The process map visually resembles the graphic model of the process created in **ELMA Designer**.

After clicking **Start Process** button (clicking on the process name in the list), you may need to specify the name of the process instance (Fig. 95), or simply confirm the start, if the name is generated according to the template (see Chap. 5, p. 5.5.1 Name of instances).

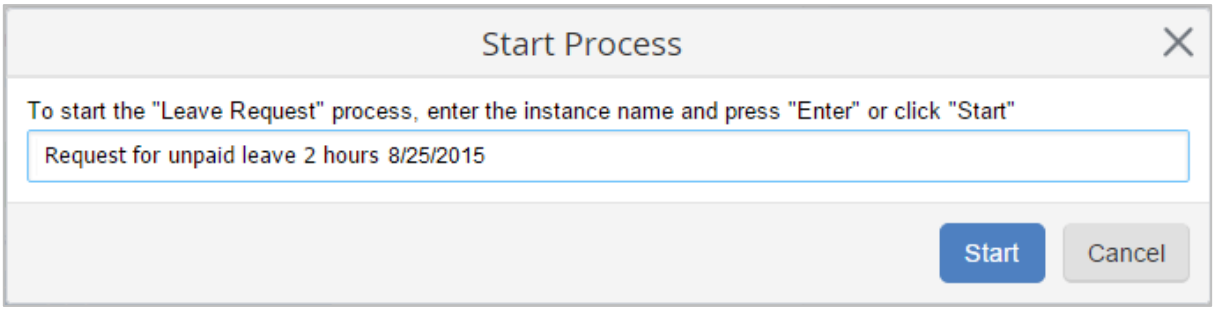


Fig. 95. The standard process start window inquiring the process instance names

ELMA executes the started business process according to its graphic model: it automatically assigns tasks to the users, runs scripts, makes decisions, sends notifications and performs other actions.

5.2.2. Executing User Tasks

While executing the business process, **ELMA** assigns tasks according to the process model. You will receive a notification on each new task and will be able to check a task list in the **Left menu** → **Tasks** → **Task list** (Fig. 96). The Tasks portlet (Fig. 97) is designed for the same

purposes. Red circle in the **Task** section and over the task icon in the top right corner informs you about the number of the active tasks.

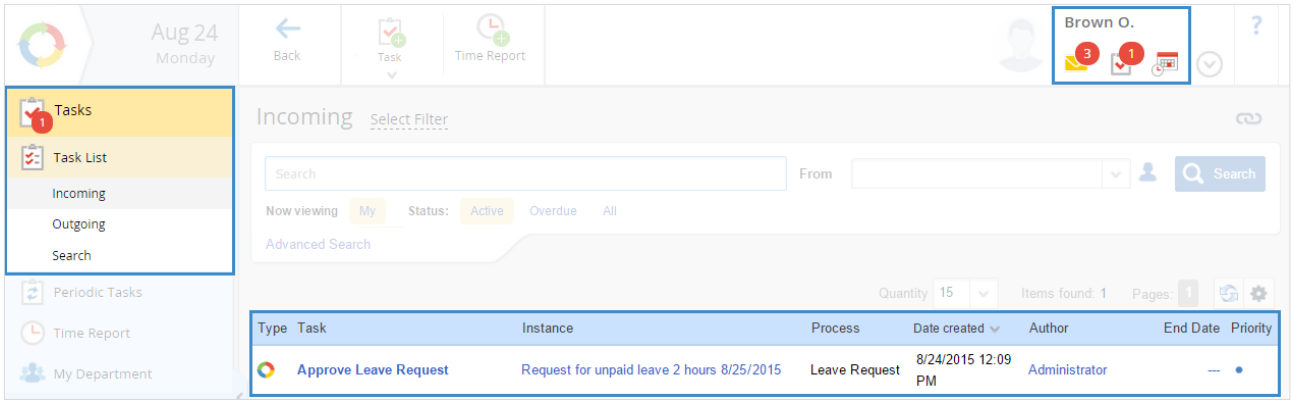


Fig. 96. A new business process task in the Tasks section

The process tasks are shown next to the icon in the **Task List**. This makes it easy to distinguish them from the other task types.

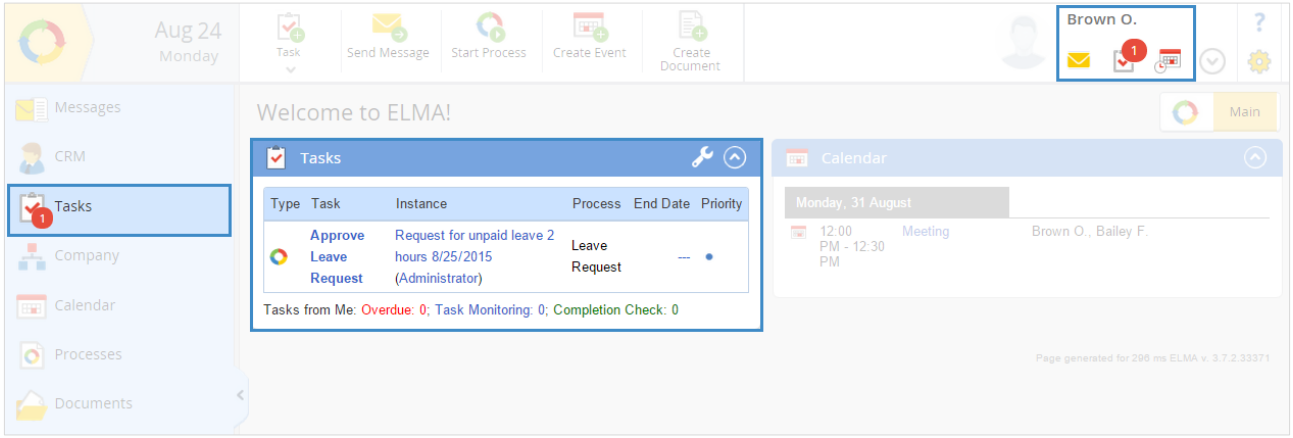


Fig. 97. A new business process task in the Tasks portlet

Click on the task title to open the task page (Fig. 98). The task page contains several elements.

Task Menu – is shown at the top of the page; it contains buttons that allow to perform certain actions with the task.

Completed button – is a button for the task completion. If you click this button, the drop-down menu will appear with the list of all available task completion variants. At the bottom of the task page, you will see buttons with the same functions.

Start execution button – click this button to indicate that you have started the task execution. This step is not necessary.

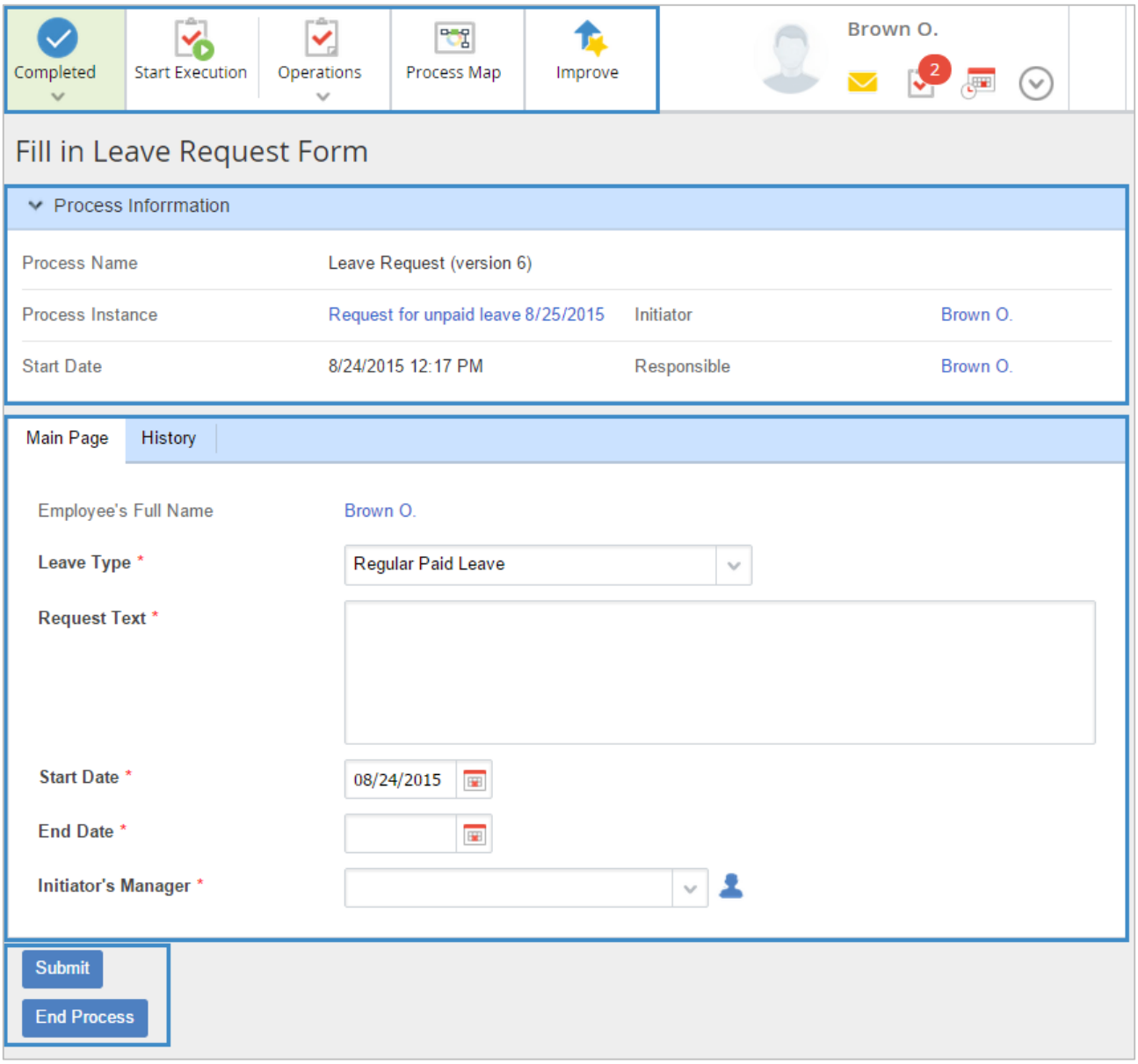


Fig. 98. The Leave Request process task

Use the multi-function **Actions** button to perform the following operations:

- **Save** – select this item if you want to save the changes in the task, but do not want to execute it. For example, to save the context variable values.
- **Reassign** - select this item if you want to reassign the task to another user. By default, this operation is available, but you can forbid it. To do this, edit the process model in **ELMA Designer** or specify permissions in the **Reassign Tasks** section.
- **Ask Question** - select this item if you want to ask any system user a question about the task.
- **Add Comment** - select this item if you want to add a comment to the task.
- **Add Time Report** - select this item if you want to submit a time report on the task.

On the **process task page** you will also see **Process Information** (by default, this panel is collapsed). It contains the basic information about the process. Click on the process instance name to go to the instance page, which contains all the available information about the process (Fig. 99): a process name, instance name, version number, start date, initiator, context variable list, current tasks, operations, sub-processes, history and participants. If permitted, the user can use this page to change the context variable values and interrupt the process at any task. The user can ask questions about the process and add comments.

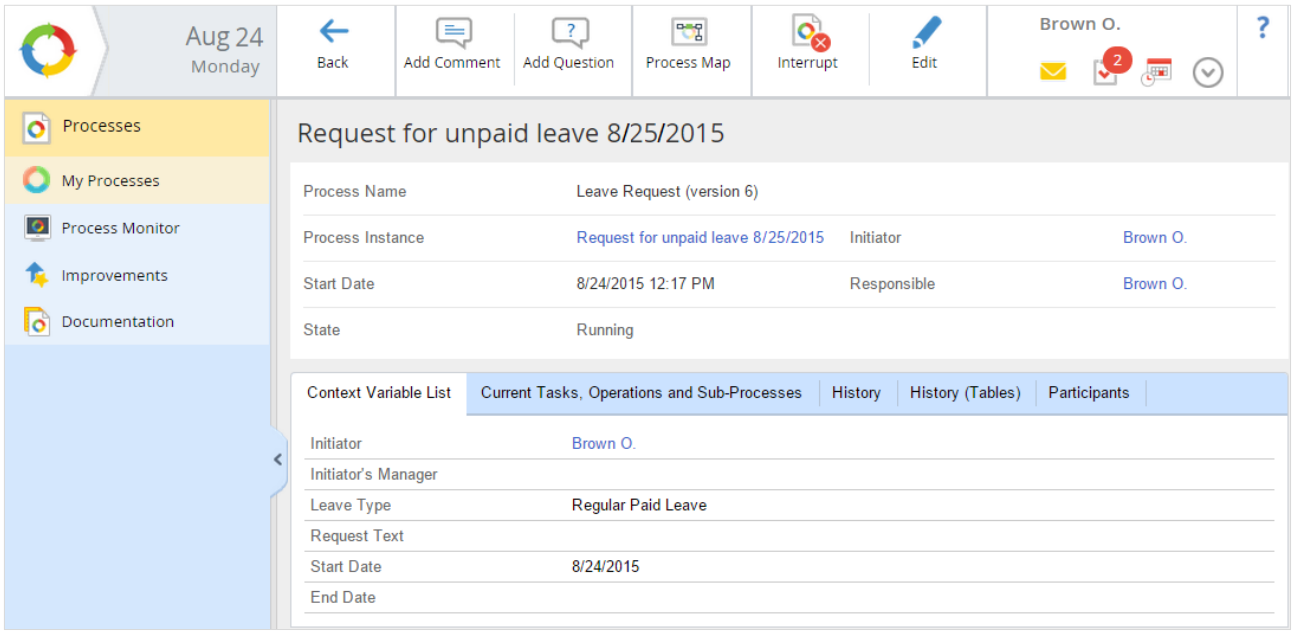


Fig. 99. Process instance page

The **Main Page** tab and the **History** tab show task description. The **Main Page** tab contains items that correspond to the context variables specified when modelling the process. The required fields are marked with an asterisk; you cannot complete the task unless you fill them in or otherwise specified in the connector settings.

The **History** tab shows the task execution history: relevant actions, questions, user comments and document attachments.

At the bottom of the task page, you will see the process transition buttons. After you have completed the task, click one of buttons and choose the path of the process. The number of these buttons and their names correspond to the number and the names of the connectors going out of the user task in the process model.

To execute the task you must fill in the required fields in the task form and click one of the transition buttons. After that, you will have to execute the next task according to the graphic model, or the process will finish.

Do not click the transition buttons until you actually complete the task assigned to you! You will not be able to cancel this action (unless the process model provides the return to the previous step), and **ELMA** will keep executing the business process according to its graphic model.

5.3 Controlling Business Processes

ELMA allows you to control business process execution.

There are two control options: **Day-to-day Control** and **KPI Monitoring**.

Use the **My Processes** page and portlet and **Process Monitor** page to perform day-to-day control.

To perform **KPI Monitoring** you need to create a system of metrics and KPIs (see Chapter 5, p. 5.6.7 Process Metrics and KPIs).

5.3.1. My Processes

Use the **My Processes** sub-section to monitor and control the execution of the processes in which you directly participate, i.e. processes where you are the initiator, responsible or executor.

Click **Processes**. **ELMA** will automatically redirect you to **My Processes**, where you will see the list of instances sorted by the **Created by Me (All)** filter. These are the instances initiated by you.

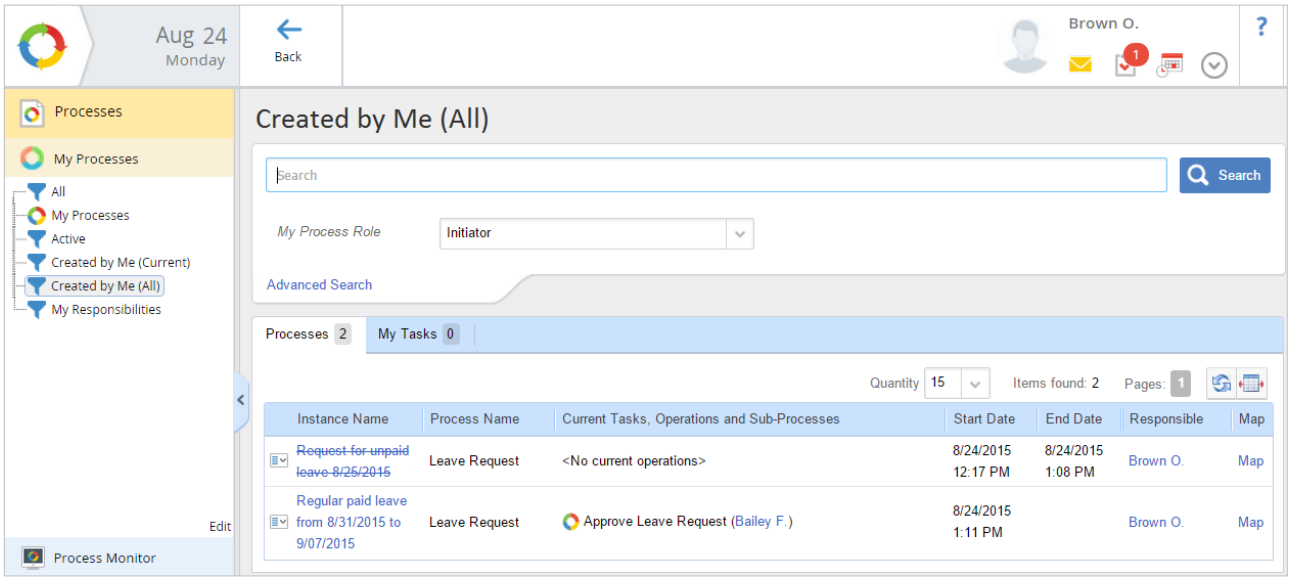


Fig. 100. My Processes → Created by Me (All)

Switch between the filter names to show all the processes matching the respective filter (processes where you are the initiator, responsible or executor).

My Processes section (Fig. 101) contains a table with five columns:

- **Instances** – shows the names of all the process instances where the current user is the initiator, responsible or executor;
- **Active** - shows the number of the current process instances;
- **My Tasks** - shows the number of the process tasks assigned to the current user.
- **Completed** - shows the number of the completed process instances;
- **Interrupted** - shows the number of the interrupted process instances.

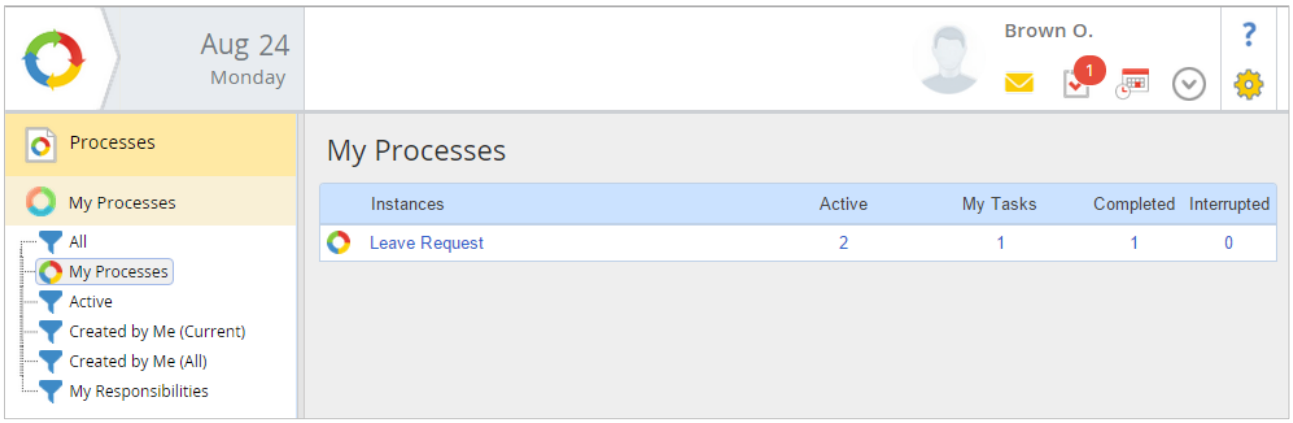


Fig. 101. My Processes

Click on the process name to go to the process page.

Click on the number of the active, completed or interrupted instances to go to the **Processes** tab of the process page. Click on the number of the task, the **My Tasks** tab of the process page will open.

These tabs show properly filtered information about the respective process.

My Processes portlet has similar functions. You can place this portlet on the main page (Fig. 102).

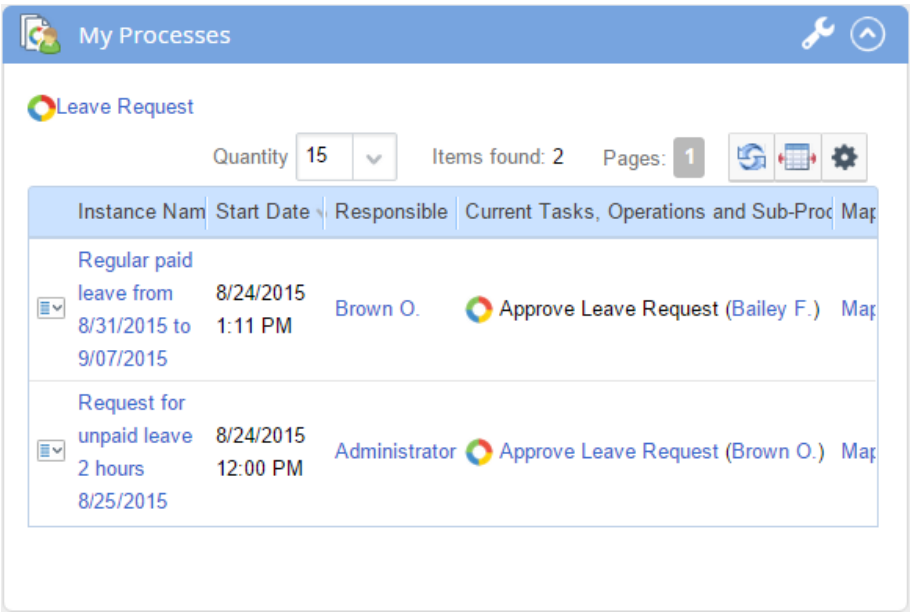


Fig. 102. The My Processes portlet

In this portlet, you will see all the active instances you initiated, current tasks and their executors.

5.3.2. Process Map

The process map is a graphic representation of the process algorithm, a schematic image that shows the process instance progress and active tasks.

To open the process map in **ELMA Web Application** click the **Process Map** button. You can also click the link:

- in the top menu of the process instance page (Fig. 99);
- in the top menu of the process task (Fig. 98);
- in the **My Processes** section and its sub-sections: the **Map** link for each process instance (Fig. 100);
- in the **My Processes** portlet: the **Map** link for each process instance (Fig. 102).

The **Process Map** button is available for the process initiators and the users with relevant permissions. You can assign these permissions on the permissions page of the process: click **Administration → Business Processes → Processes → name of the process → Task list.** For each process, you can assign different permissions.

Use the process map to monitor the process progress (Fig. 103). The completed tasks, stages and connectors have blue bold outlines.

Currently active operation has green bold outline.

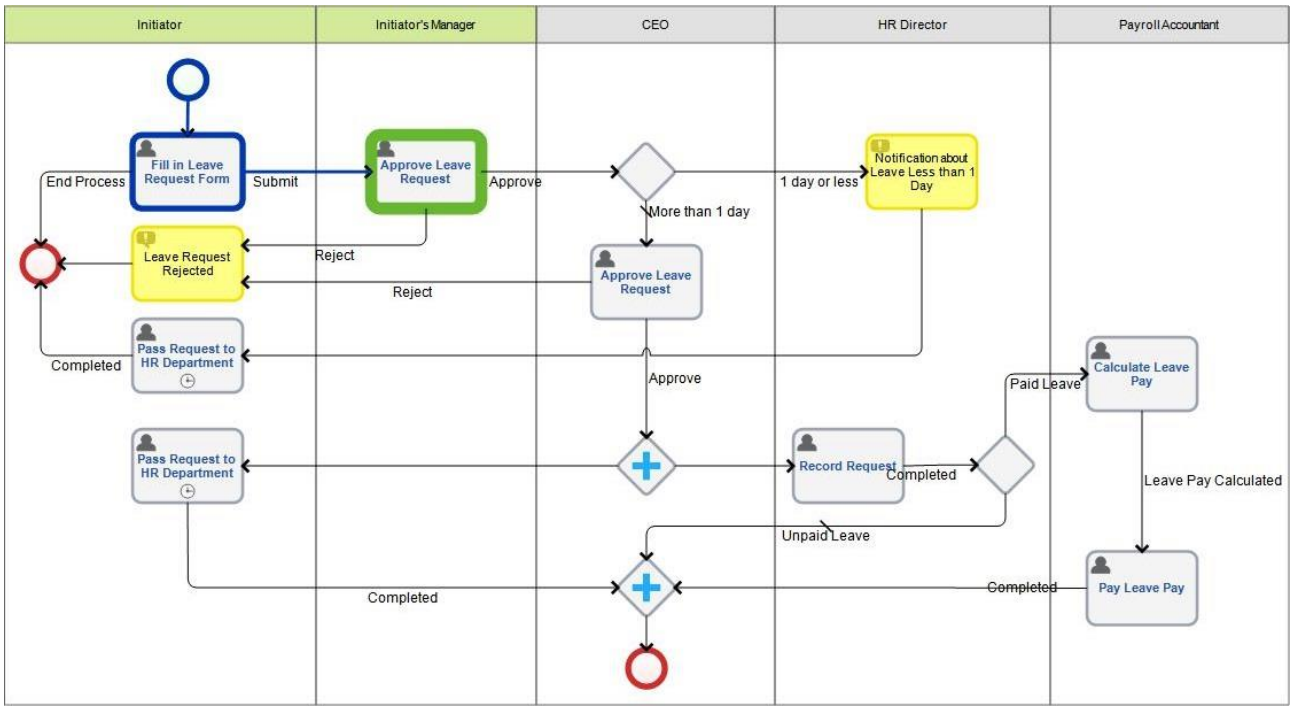


Fig. 103. The Leave Request process map

When the user clicks on a completed or active task on the process map, the task page opens in the new browser tab, if this user has viewing permissions.

5.3.3. Process Monitor

Process Monitor helps to analyze the execution of the processes in general. It is especially useful for those users who do not have process monitor permissions.

Users can view the processes in this section even if they are not the direct process participants. In **ELMA**, by default, the process owner and the supervisor have permissions to monitor the process. You can assign process monitoring permissions on the process permissions page: click **Administration → Business Processes → Processes → name of the process → Process Monitoring**.

When designing the **Leave Request** process model and configuring its **Responsibility matrix**, you have assigned monitoring permissions to the HR Director (process owner) and the CEO (process supervisor).

Now, add monitoring permissions to the users holding the positions of Payroll Accountant and Chief Accountant.

To do this, sign in as ELMA Administrator (login: admin) and go to **Administration** → **Business Processes** → **Processes** (Fig. 104). Click on the process name (**Leave Request**) to open the permissions settings page for this process.

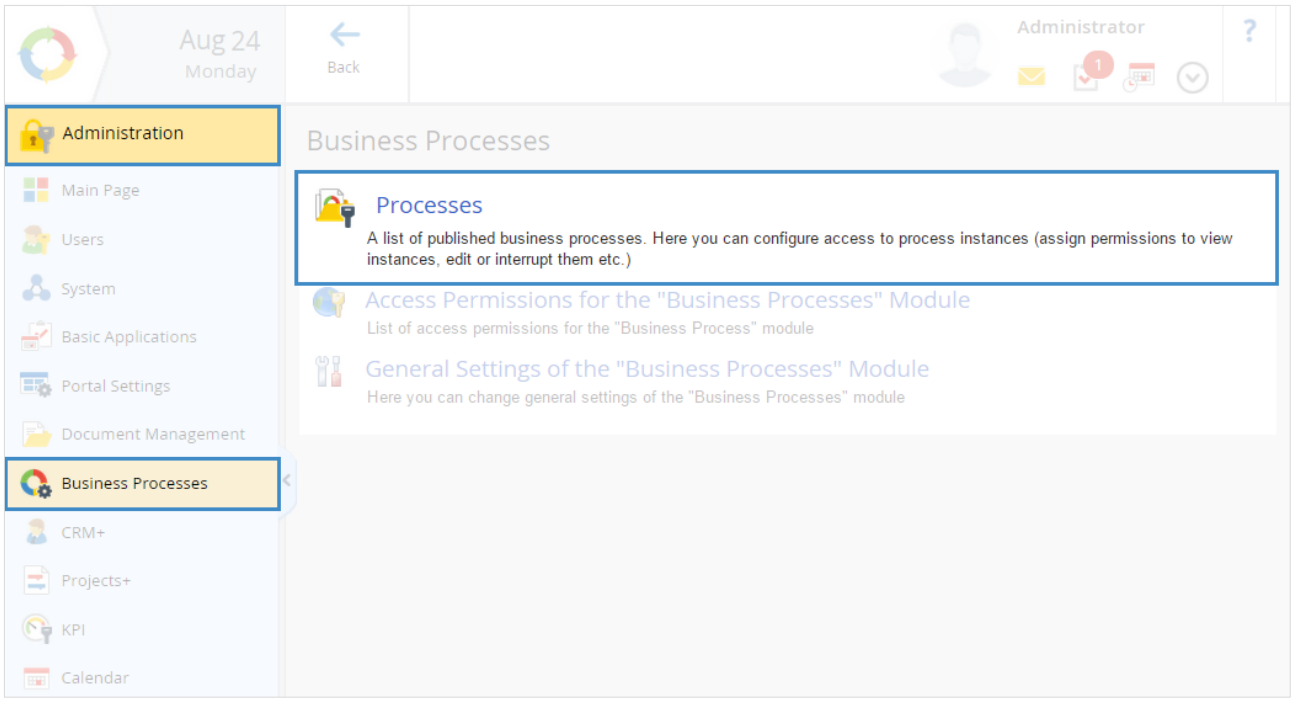


Fig. 104. Administration → Business Processes → Processes

In **Process Monitoring**, click **Add** to add organizational structure elements (Chief Accountant and Payroll Accountant) (Fig. 105). Click **Save** to confirm the changes. Now the users, holding the positions you have added, can monitor all the instances of this process.

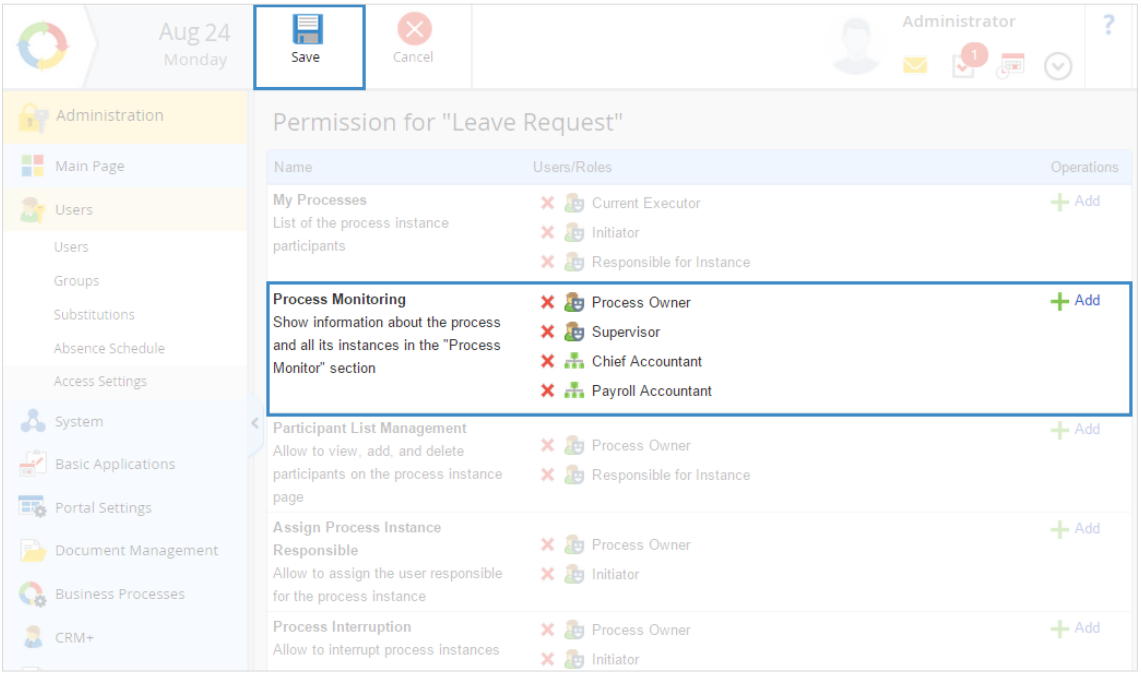


Fig. 105. Configuring the process monitoring permissions

Process Monitor page gives information about the number of active tasks as well as active, completed and interrupted instances of a certain process (Fig. 106).

Fig. 106. Process monitor

On the main page, in the **Left Menu** select **Processes** → **Process Monitor** → **process name** → the **Process Monitor Page** opens. Here you can find detailed information about all the instances of the selected process (Fig. 107).

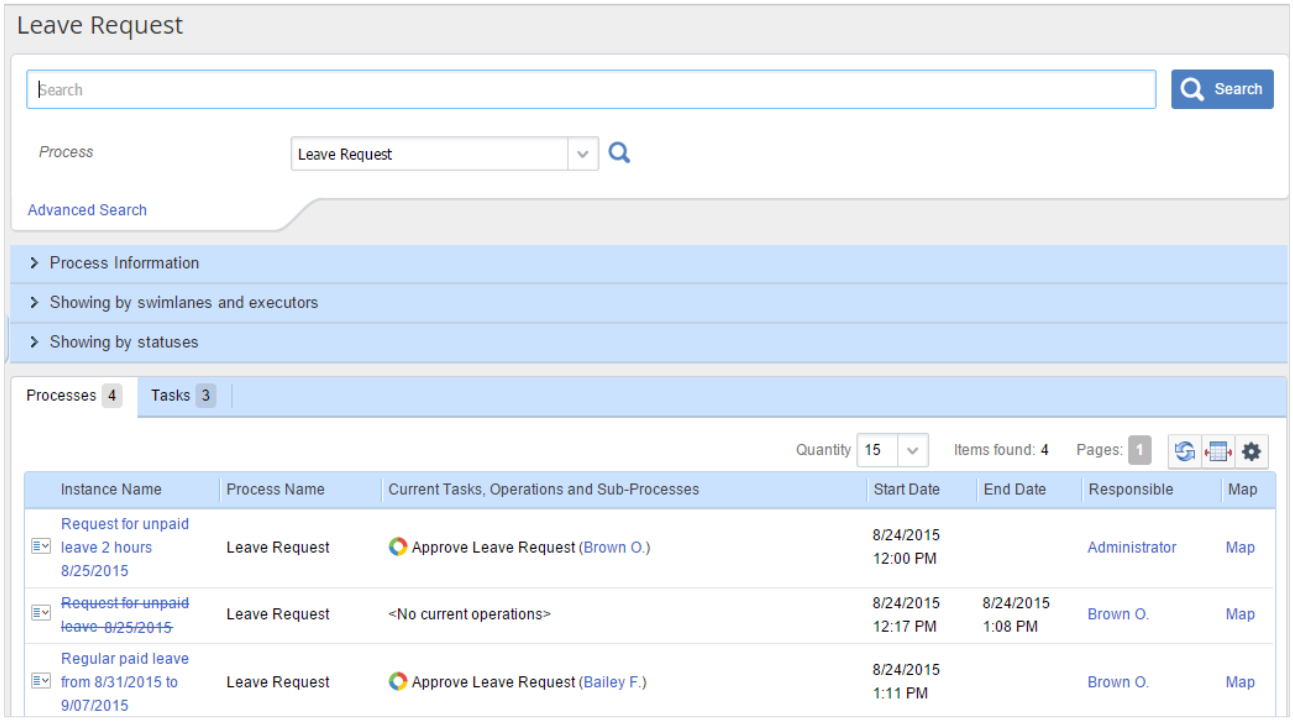


Fig. 107. The Leave Request process monitor page

On the process monitor page, in the collapsible panels at the top of the table, you can find information about the state/statuses of the process instances and the names of the task executors (Fig. 108).

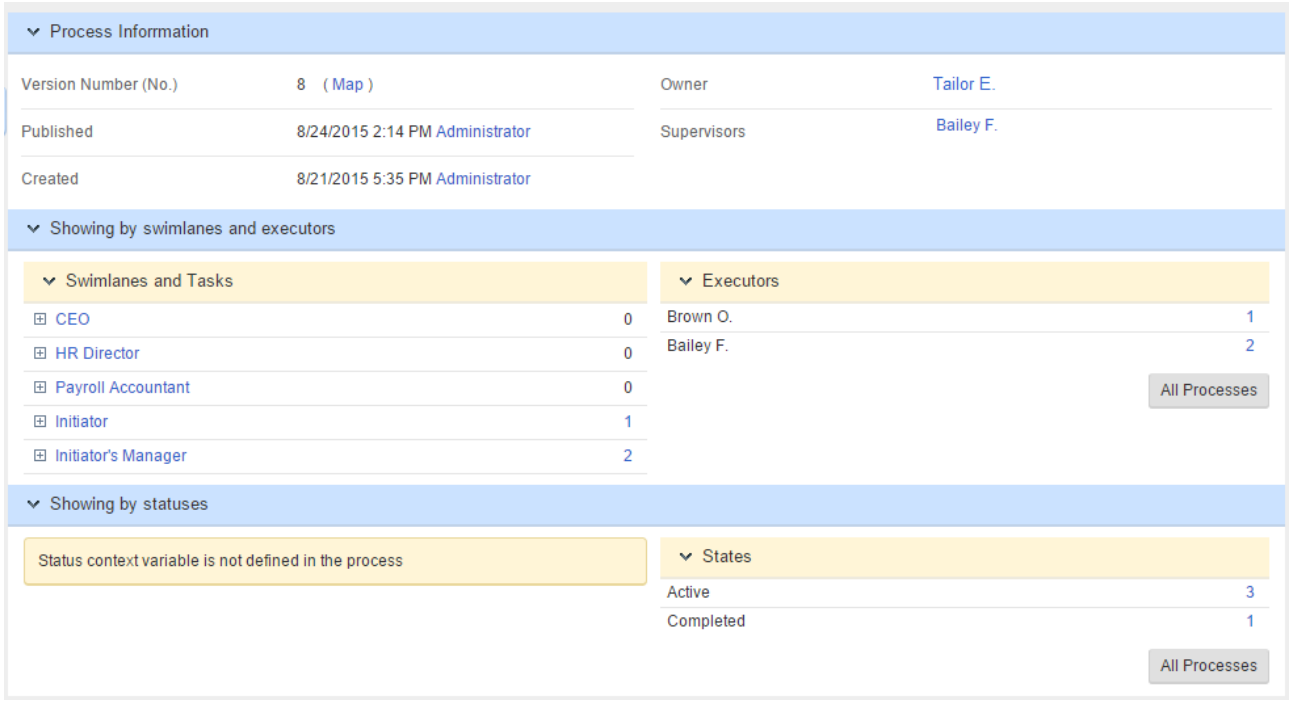


Fig. 108. Collapsible panels on the process monitor page

5.3.4. Execution Queue

Processes → **Execution Queue** contains information about all the instances currently processed by the execution service and the list of execution errors. If **ELMA** fails to execute any process operation, the error info will appear in the **Execution Queue** section (Fig. 109). This section is especially useful for ELMA Administrators, as they must promptly monitor process execution. By default, only the users from the **Administrators** group have access permissions to this section.

Process execution errors mostly occur in scripts (see Chapter 5, p. 5.6.5 Scripts). If no errors occur during the process execution, this section will be empty.

The system will make at most nine attempts to perform the operation. The occurred errors will be shown in the **Process Execution Queue**. You must correct corresponding errors (usually you need to edit the business process model) and start forced execution of the erroneous operation.

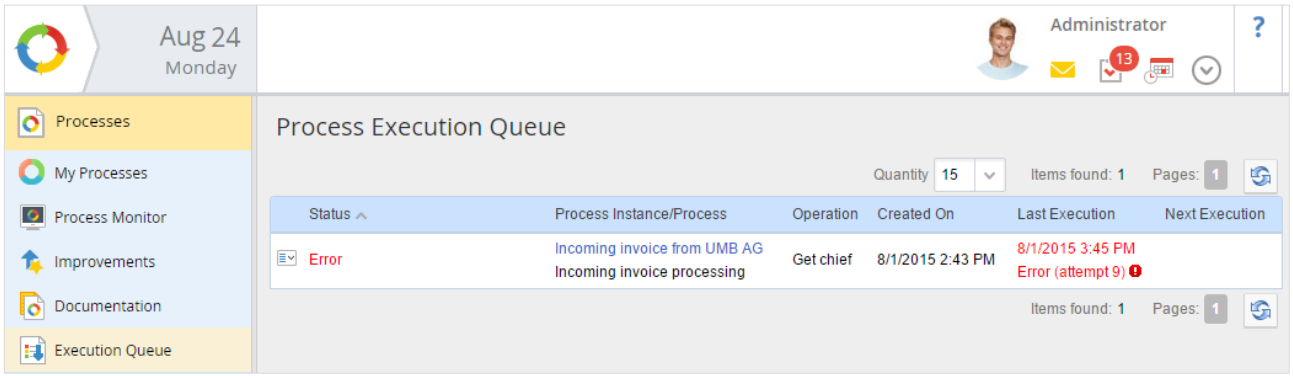


Fig. 109. An example of the Execution Queue sub-section

5.4 Improving Business Processes

Another stage of PDCA cycle is the business process improvement. **ELMA** has a flexible structure and you can edit your processes even after their implementation. Moreover, you can apply your changes immediately.

Sometimes, users come up with improvement ideas and make suggestions about the process model, task forms, etc. during the process execution or after its completion.

ELMA has process improvement tools to consider and process these suggestions (Fig. 110). Any user at any process stage can use the **Improve** button to make an improvement suggestion. The suggestion will be sent to the process owner who decides whether to make an improvement or reject it. You can improve processes without executors' suggestions.

When a user creates an improvement suggestion, **ELMA** starts an instance of the **Improvement process**. The user who creates the improvement suggestion is the initiator of this instance. **ELMA** executes this process as any other process. You can also modify the improvement process, so that it meets your company's specific needs.

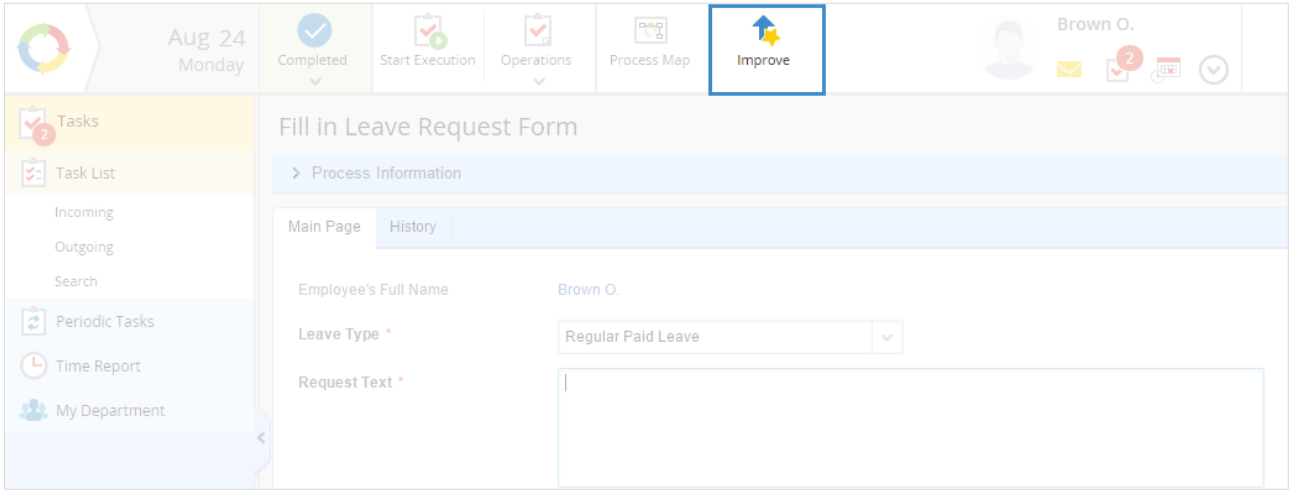


Fig. 110. The Improve button to submit a suggestion

Below see the **Improvement Process** map (included in the standard delivery) (Fig. 111):

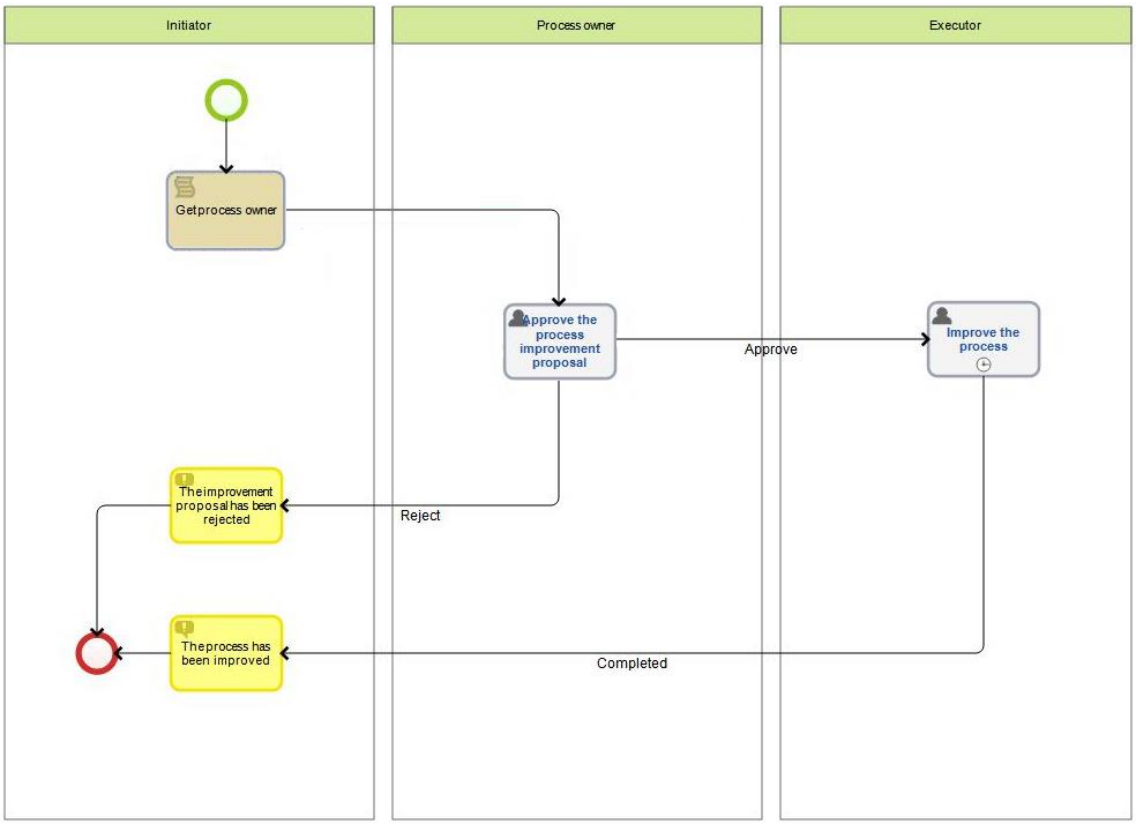


Fig. 111. The Improvement Process map

Suggest an improvement for the **Leave Request** process at the first process task. To do this, in the task window, click the **Improvement** button and enter the improvement description in the new window (Fig. 112). Then click **Send**:

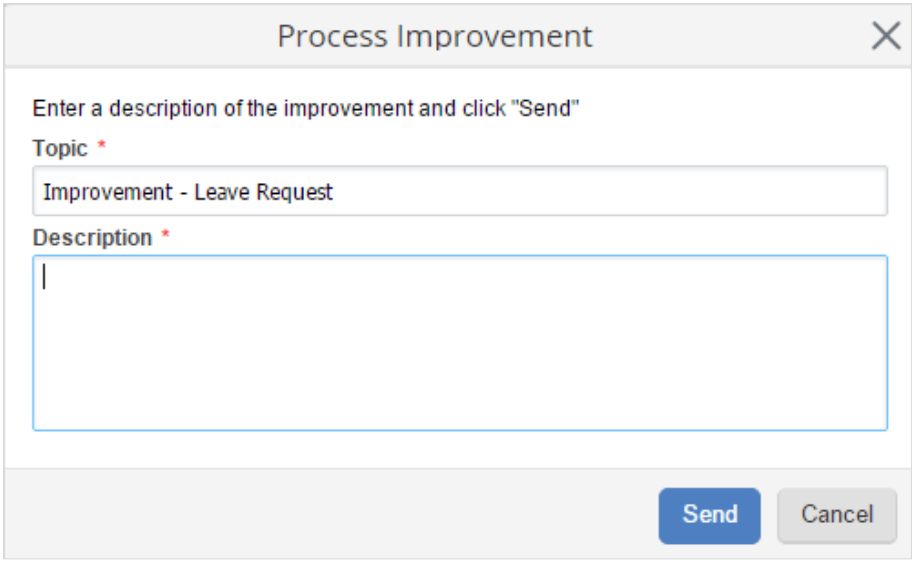


Fig. 112. Making a suggestion concerning process improvement

The improvement of the **Leave Request** process starts. The process owner receives a suggestion for approval. According to the **Responsibility matrix** settings, the process owner is the HR Director. Therefore, the approval task will appear in the task list of the HR Director.

If the process owner is not specified, the users who made a suggestion must approve it themselves.

The process owner will consider the suggestion and approve or reject it. If the suggestion is approved, the process owner will select the executor, specify the due date and, if necessary, add a comment.

After that, the **Improve Process** task will appear in the task list of the selected executor. In the task form, the executor will find the improvement description and the link to the task, which became the starting point of the improvement. The executor must improve the process in **ELMA Designer** and report back. Then the initiator will receive a notification about the improvements made to the process.

You can see all the process improvements in **Processes** → **Improvements** (Fig. 113).

While you make improvements, **ELMA** continues executing processes. You can start the improved process version in **ELMA Web Application** immediately after you applied the changes and published the improved process.

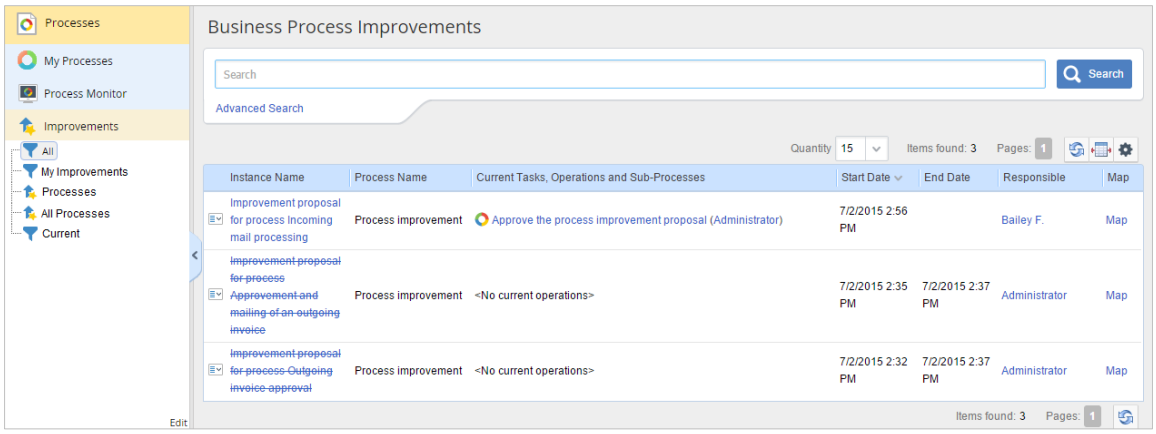


Fig. 113. Improving processes. Improvements → All

Improve processes as many times as you need to achieve the desired result.

5.5 Specifying the Process Access Permissions

ELMA offers several levels of access to business processes. There are global access settings for all the processes and individual access settings for each process.

Manage the process access permissions at all levels in **Administration → Business Processes** (Fig. 114).

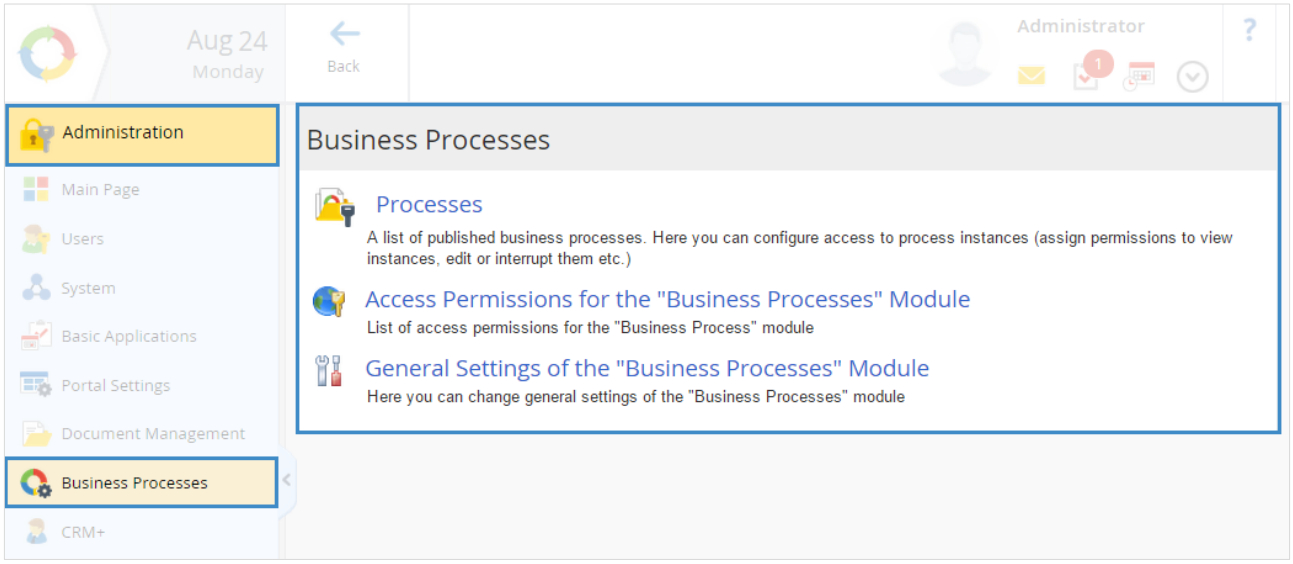


Fig. 114. Administration → Business Processes

Specify the global access permissions for all the processes in **Administration → Business Processes → Access Permissions for Business Processes** module.

In this section, you can configure the access permission for:

- the **Business Processes** section and its sub-sections;
- the process improvement tools and functions.

To assign access permissions, add a user group to the corresponding permissions unit (**Assign Groups** button); to remove access permissions you must remove the group from the permissions unit. You can also edit the group: remove or add users from/to the group with certain permissions.

In **Administration → Business Processes → General Setting of Business Processes**, you can select the process task author. Choose **Yes** or **No** for **Execute on behalf of the user responsible for the instance** option.

If **Yes**, the user responsible for the instance (by default, it is the process initiator) will become the author of *all* the process tasks. In this case, the responsible user will have access to all the process tasks.

If **No**, the user responsible for the instance (by default, it is the process initiator) will become the author of the *first* instance task; the author of each subsequent task will be the executor of the previous task. The user responsible for the instance will have access only to the tasks placed in their swimlane.

In **ELMA**, you can specify access permissions for the instances of a certain process. Configure these settings in **Administration** → **Business Processes** → **Processes** (Fig. 115).

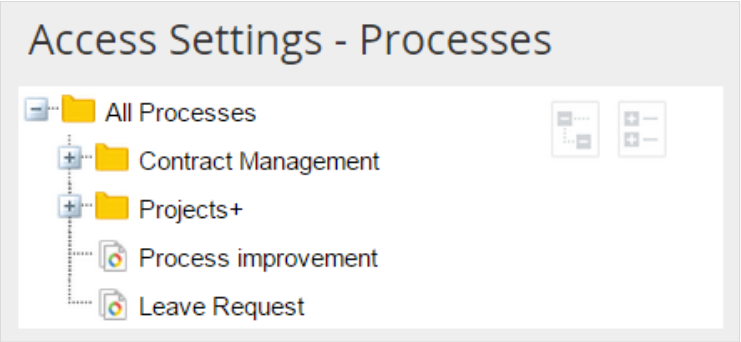
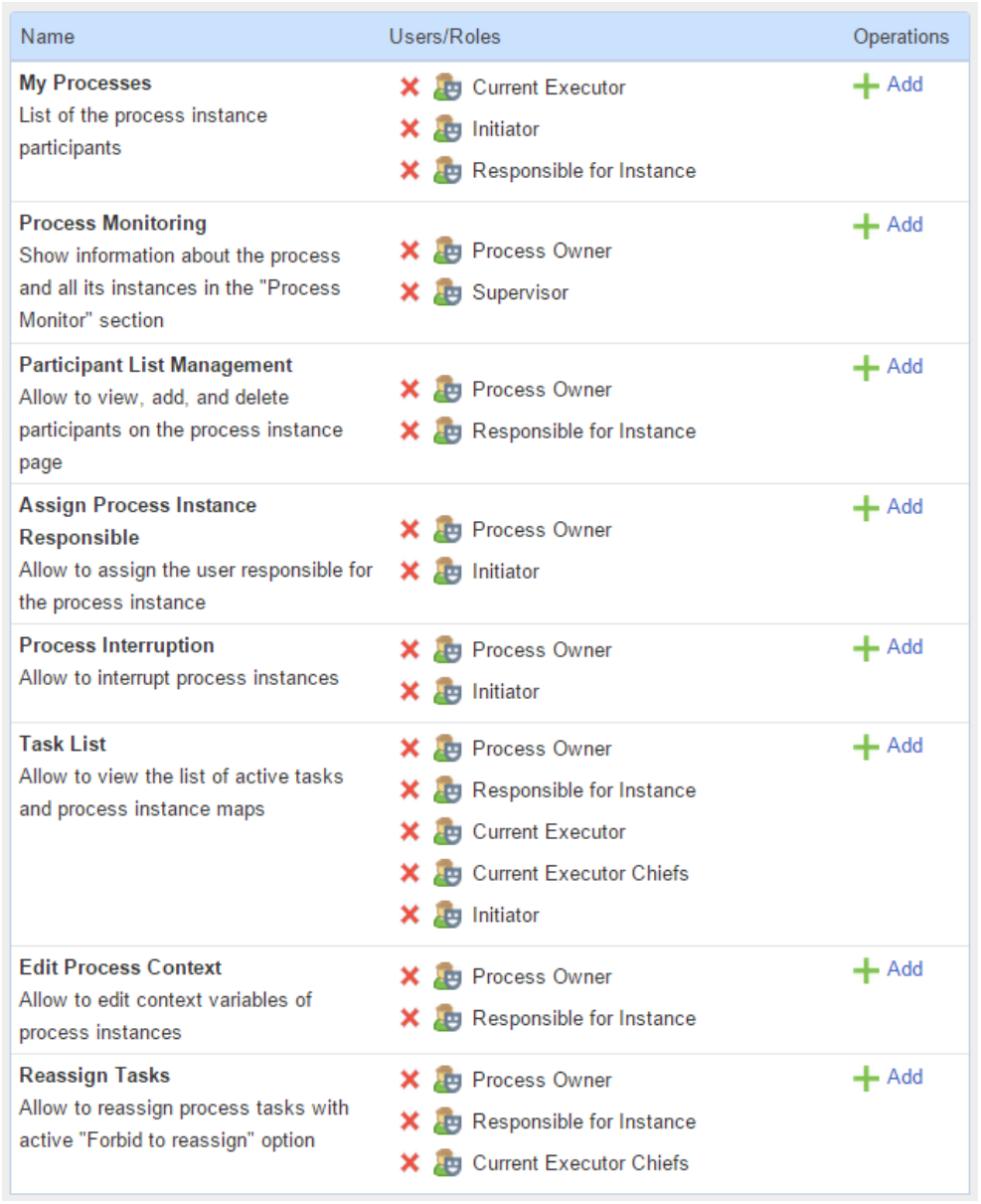


Fig. 115. Access to processes

This page shows the list of all the processes. To configure access to a specific process, click on the process name to open the page with access permissions for this process (Fig. 116). The access permissions are assigned for the user groups, organizational structure elements, specific users and process roles.



Name	Users/Roles	Operations
My Processes List of the process instance participants	Current Executor Initiator Responsible for Instance	Add
Process Monitoring Show information about the process and all its instances in the "Process Monitor" section	Process Owner Supervisor	Add
Participant List Management Allow to view, add, and delete participants on the process instance page	Process Owner Responsible for Instance	Add
Assign Process Instance Responsible Allow to assign the user responsible for the process instance	Process Owner Initiator	Add
Process Interruption Allow to interrupt process instances	Process Owner Initiator	Add
Task List Allow to view the list of active tasks and process instance maps	Process Owner Responsible for Instance Current Executor Current Executor Chiefs Initiator	Add
Edit Process Context Allow to edit context variables of process instances	Process Owner Responsible for Instance	Add
Reassign Tasks Allow to reassign process tasks with active "Forbid to reassign" option	Process Owner Responsible for Instance Current Executor Chiefs	Add

Fig. 116. Default access permissions for the process

Description of access permissions for a process:

My Processes – Define a list of the process instance participants. The users specified in this section can see the process and all its instances in **ELMA Web Application** → **My Processes** sub-section.

Process Monitoring – Define the users who can see the process and all its instances in **ELMA Web Application** → **Process Monitor** sub-section.

Participant List Management – The users specified in this section will see the **Participants** tab on the process instance page. In this tab, they will be able to view, add and delete

participants. The specified users also will be able see the process instance in **ELMA Web Application** → **My Processes** sub-section.

Assign Process Instance Responsible – allows you to assign the user responsible for the process instance.

Process Interruption - the users specified in this section will be able to interrupt the process at any stage, for example, in case of falsely started and outdated processes or the processes with critical errors. Users with these permissions will see the **Interrupt** button on their process instance page.

Task List - the users specified in this section will see the **Current Process Tasks** tab on their instance page. The tab allows users to view the list of active tasks and process instance maps.

Edit Process Context – allows users to edit context variables of the process instances. The users specified in this section will see the **Edit** button on the process instance page. By clicking this button, they will be able to open a page with the list of editable context variables. **Warning! Changing context variables may affect the further process execution and cause errors**!

Reassign Tasks - the users specified in this section can reassign the process tasks. When these users open a process task, in the top task menu they will see **Actions** → **Assign** button.

Fig. 116 shows the default permissions for every published process. Fig. 117 shows the edited permissions for the **Leave Request** process: **ELMA** Administrator now has permissions to interrupt the process and edit the process context; the accountants now have permissions for process monitoring.

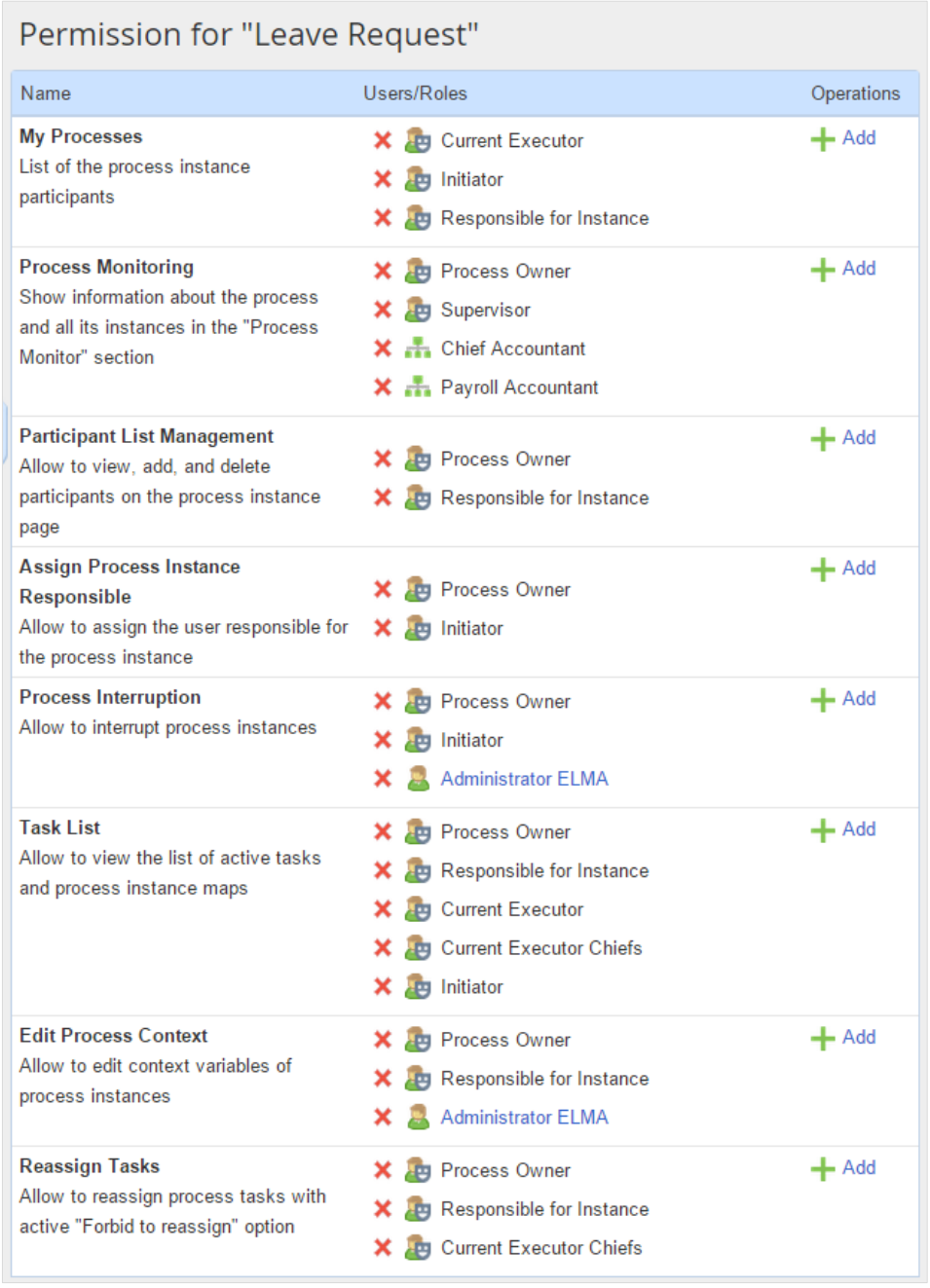


Fig. 117. Access permissions for the Leave Request process

5.6 Assigning Substitutions

ELMA has a mechanism that allows one employee substitute for another during their absence.

When you assign a substitute user in **ELMA**:

- the substituted user will still receive periodic tasks and messages;
- the tasks assigned to the substituted user prior to the date of substitution, won't be automatically reassigned to the substitute;
- new process tasks are automatically assigned to the substitute user;
- on the task page you will see a notification on the user substitution (Fig. 4), but you will still be able to assign tasks. The created task will be assigned to the substituted user (will not be automatically reassigned to a substitute).

This means that the system automatically checks for substitutions only when assigning process tasks to the user, in other cases, the author is warned about substitution when choosing a process executor.

To manage substitutions go to **Administration → Users → Substitutions** section (Fig. 118). You can allow a specific user to access this section in **Administration → Application Access Settings → Global Access Settings → Substitution Administration**. By default, only ELMA Administrator can assign a substitute user.

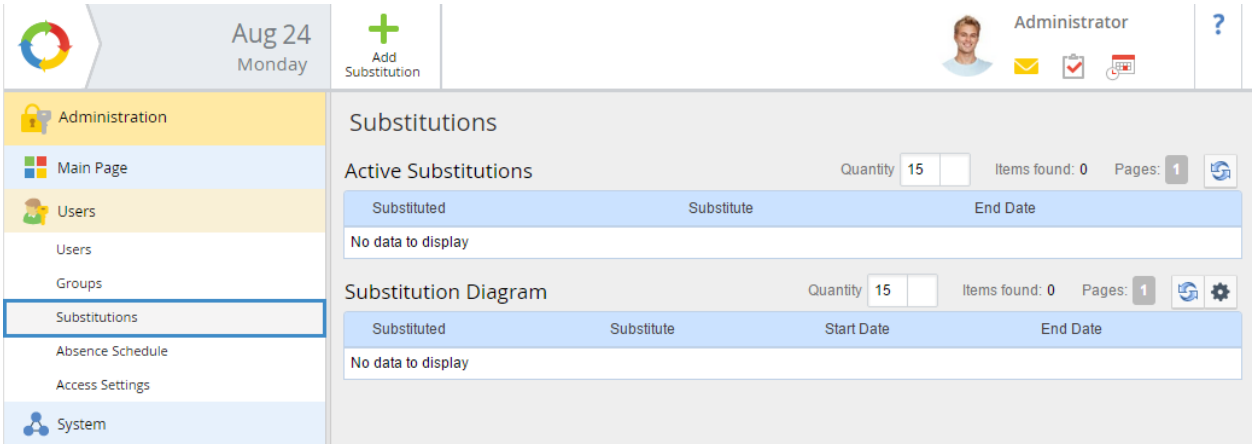


Fig. 118. Administration → Users → Substitutions section

To assign a new substitute in the top menu of the **Substitutions** section click **Add Substitution** button, fill in the substitution form and click the **Save** button (Fig. 119).

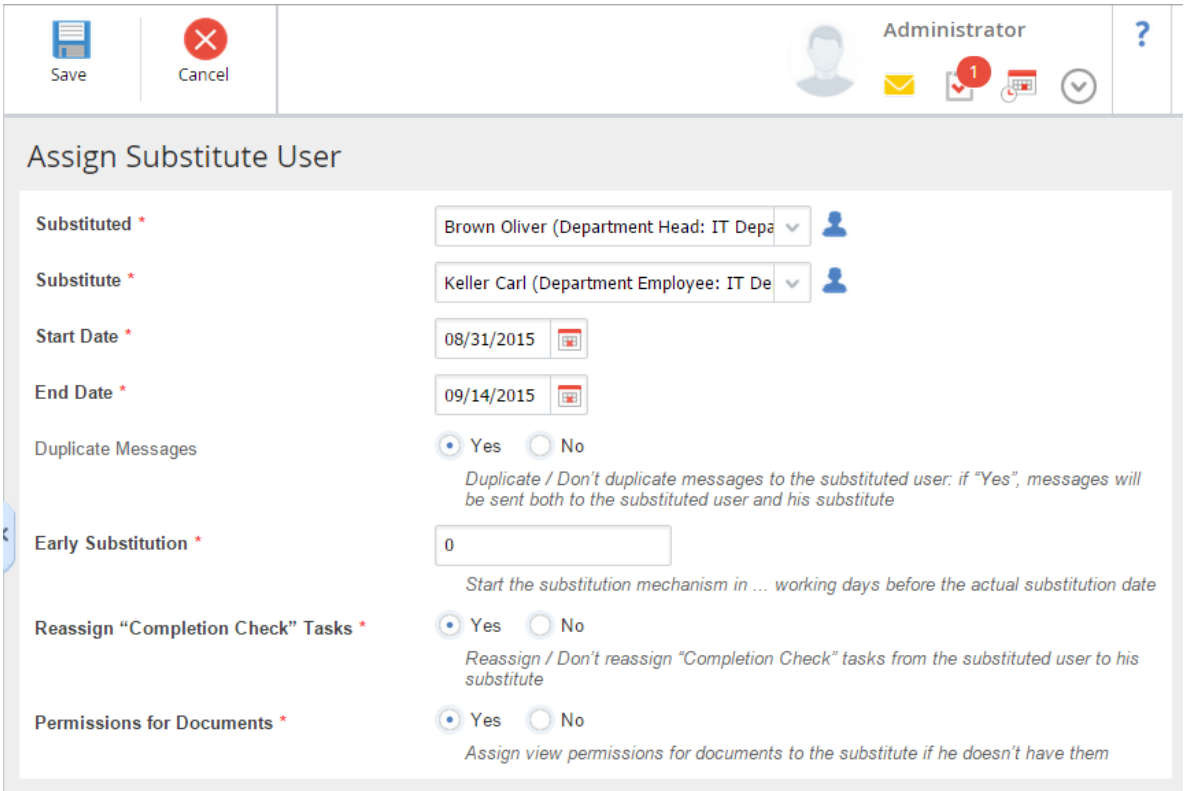


Fig. 119. Creating substitution

You can see all the information about the created substitution in **Substitution Diagram** block in **Administration → Users → Substitutions** section (Fig. 118) as well as in the **Current Substitutions** block if the current date falls within the period between the start date and end date of substitution.

Assign a substitute for the user who holds the position of IT Department Head on the current date. Now when you create a task and assign it to the IT Department Head, a warning appears that another person was appointed to substitute the IT Department Head.

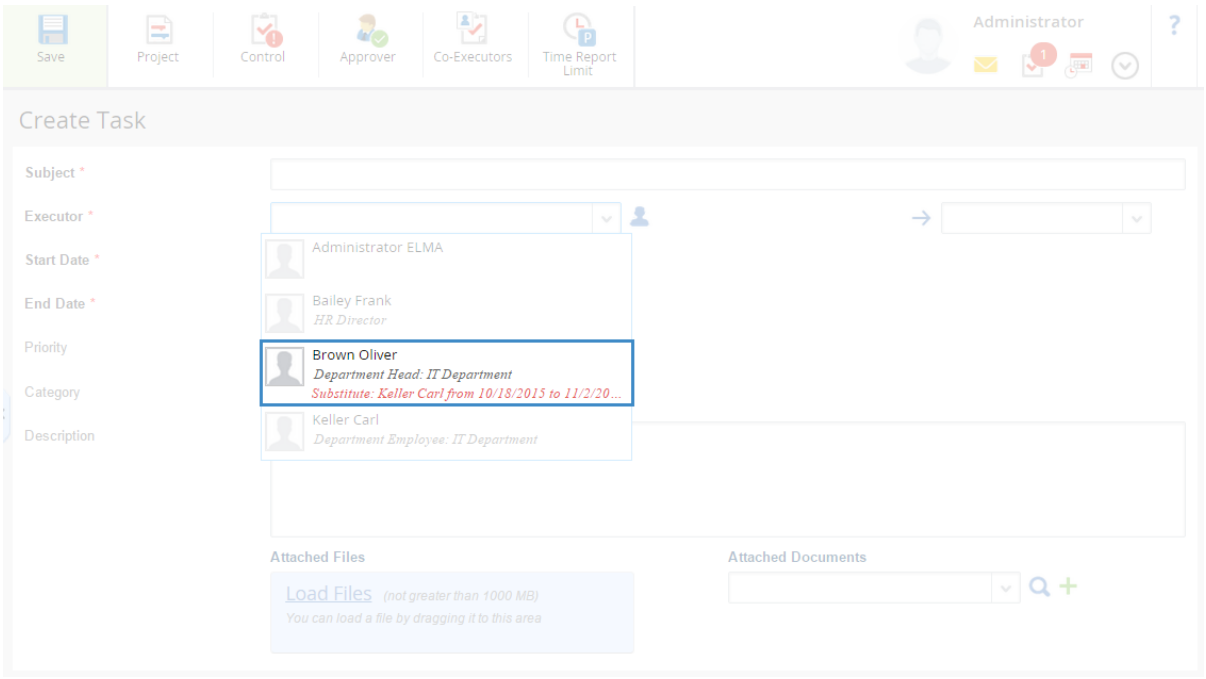


Fig. 120. Substitution warning when creating a task

As for business process instances, if the first task is created in the CEO's swimlane during the period of their substitution, this and all the other relevant tasks will be reassigned to their substitute. In addition, the substitute will be the executor of the tasks that are placed within the substituted user swimlanes in all the other processes instances.

The substitution terminates automatically after its specified end date. You can edit substitutions or cancel them before the end date in **Administration - Users - Substitutions** section (Fig. 118).

5.7 Extra Options for Business Process Modeling

The previous sections have described main solutions that **ELMA** offers for business processes modeling. Here you will find the description of the additional features for quick and fine adjustment that will make your system even more user-friendly.

Full description of the possibilities for process modeling see in **ELMA Help**. This chapter gives information about the basic and most frequently used functions.

5.7.1. Instances Naming Methods

ELMA can automatically generate unique instance names according to the templates. The process initiator is not required to enter the instance name manually.

Select the instance naming method in **ELMA Designer**. Open **Processes** → on the process toolbar click **Instance Names** (Fig. 121).

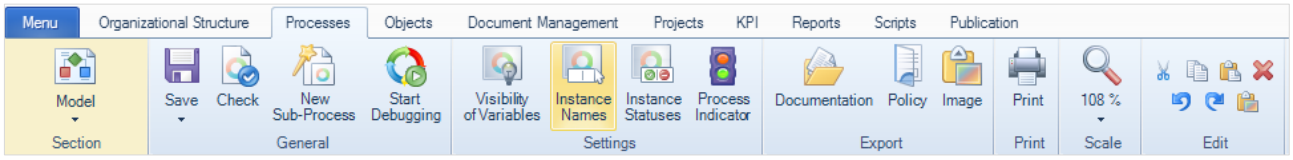


Fig. 121. The Instance Names button on the process toolbar

In the window that appears, select instance naming method: manually or template (Fig. 122). You can also select **Ask for Process Name** option, if you want to allow the instance initiator to change the instance name.

Fig. 122 shows the default instance naming method: when starting the process, the initiator must enter the name manually (select **Manually**).

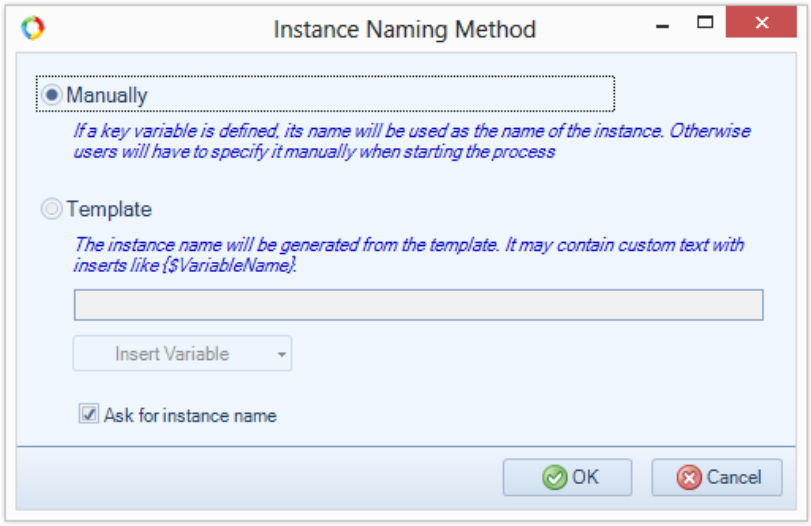


Fig. 122. Selecting the instance naming method

If you select **Template,** the name of the process instance will be generated according to the specified template. The template can contain process context variables and custom text. To see the list of the available variables, click **Insert Variable** (Fig. 123).

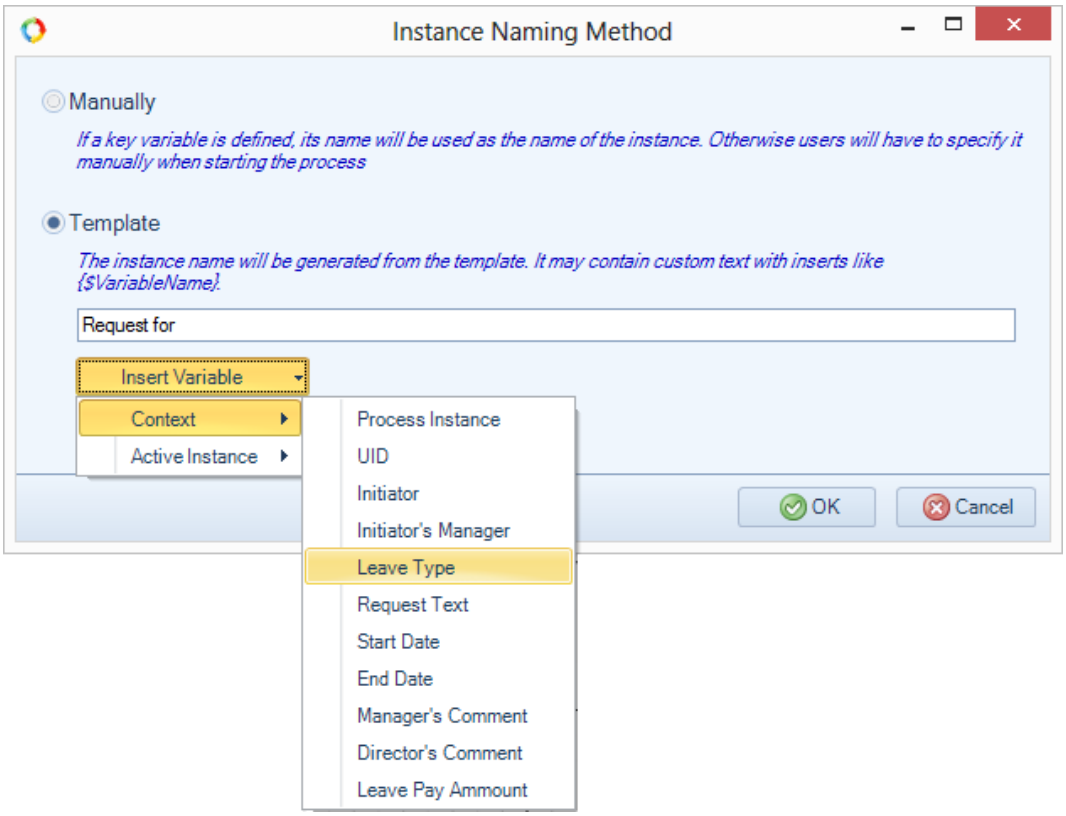


Fig. 123. An example of the Insert Variable menu

For the **Leave Request** process select the **Template** option. Then in the input line type the following: Request for *{Request Type}*, *{Start Date}* to *{End Date}*, from *{Initiator's Full Name}*. The values in italic, enclosed in curly brackets, will be automatically inserted for each new process instance. See the example below Fig. 124.

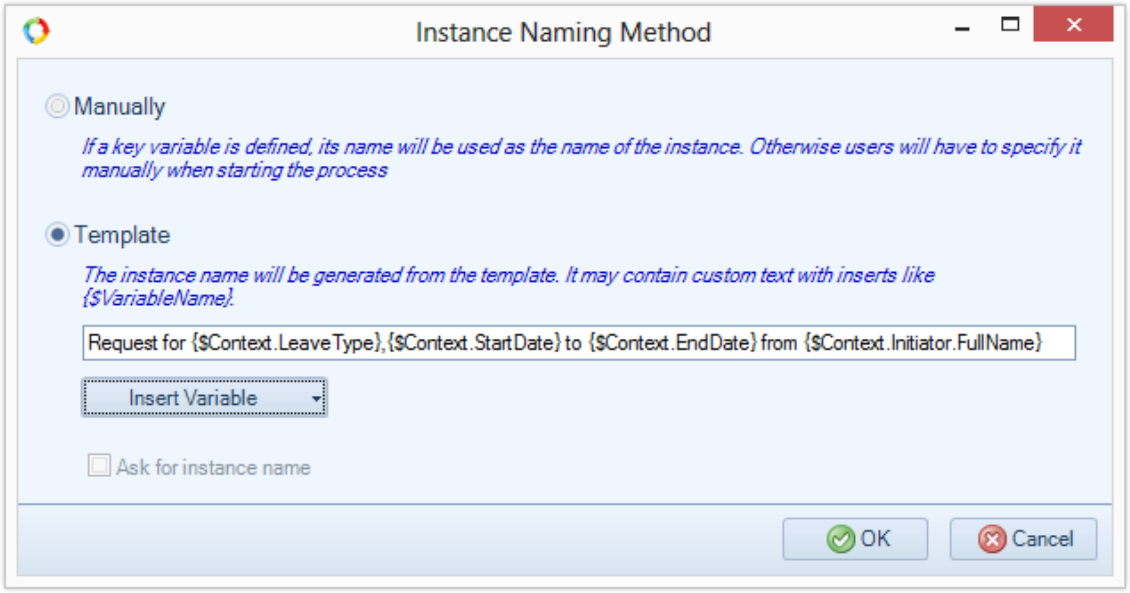


Fig. 124. Selecting naming method for the Leave Request process instances

To save and apply the changes, save and publish the process. Now when you start **the Leave Request** process, you will only need to confirm the execution, **ELMA** will automatically generate a process name right after the start and change it when the context variables change.

An example of the process instance name generated according to the template see in the Fig. 125.

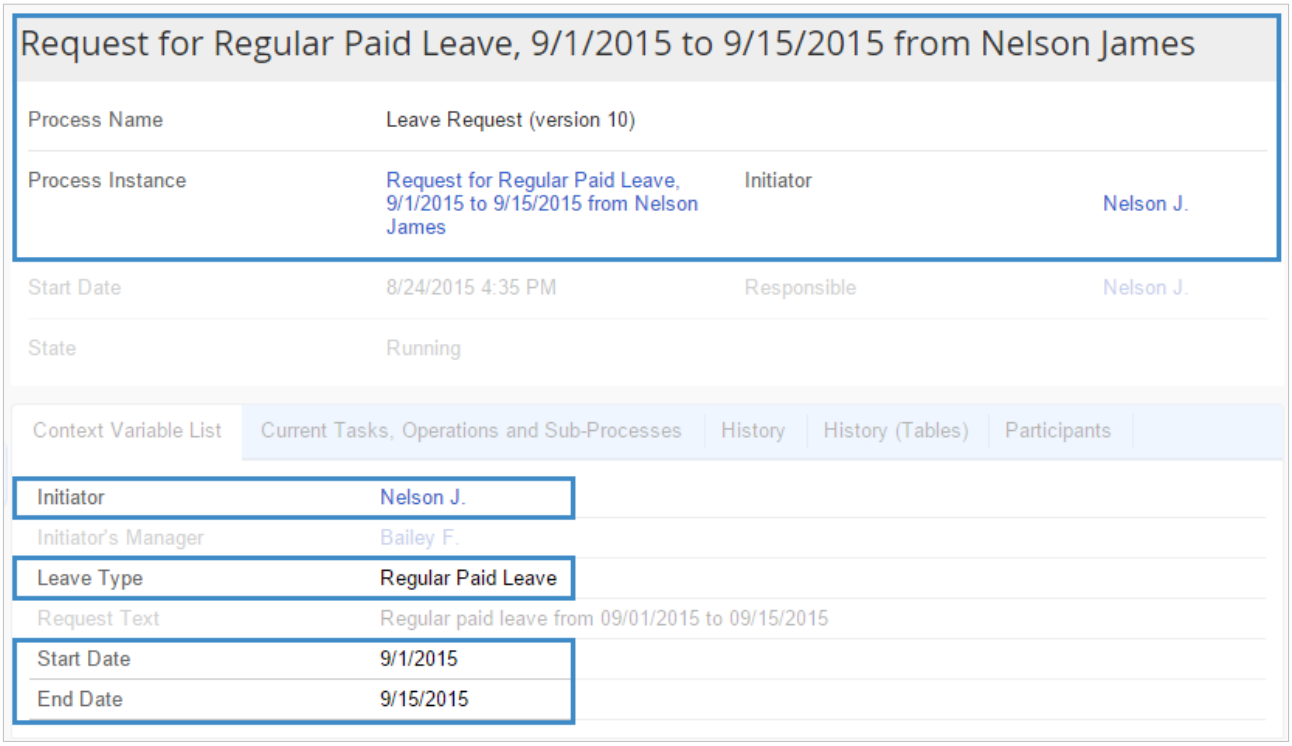


Fig. 125. The automatically generated name of the Leave Request process

5.7.2. Operation Markers

Some BPMN elements in **ELMA** BPM have advanced settings: **Operation Markers**. Markers show that the operation has additional execution parameters.

There are several types of operation markers:

- Conditional Operation;
- Loop;
- Multiple Execution.

You can use markers for the following operations:

- Sub-Processes;
- User Tasks;
- Notifications.

The list of the available markers depends on the operation type.

You can use all three marker types for the **External Sub-Process** operation.

You can use **Conditional Operation** and **Loop** for the **Internal sub-process** and **Task**.

For the **Notification,** the **Conditional Operation** maker is available.

Click the **Change Marker** button and select the operation marker (Fig. 126). In the operation settings window a new icon will appear that corresponds to the marker type. An operation marker icon will also appear in the operation graphic model indicating marker's type.

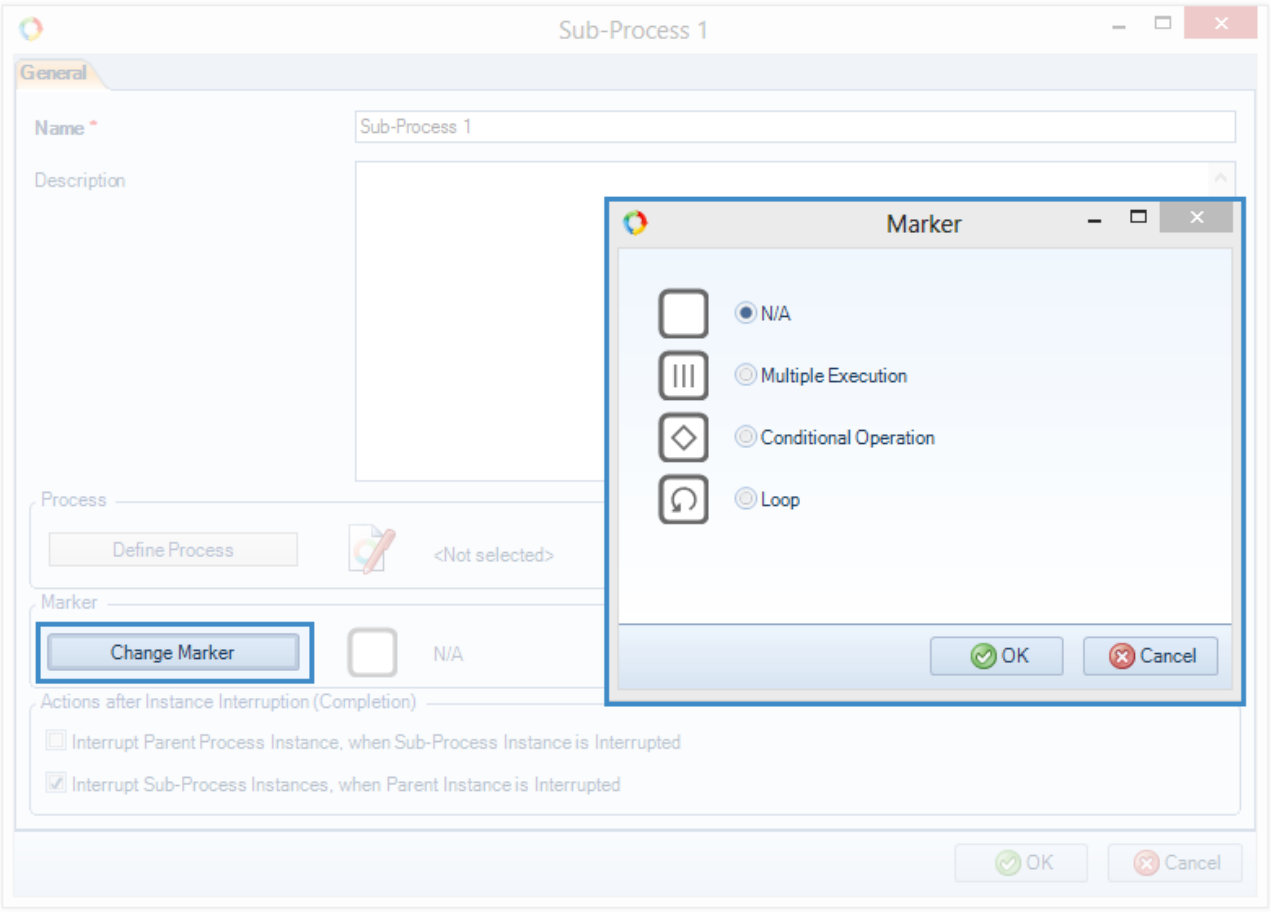


Fig. 126. The Change Marker button and the marker selection window

The **Multiple Execution** marker

You can use this marker if you need to simultaneously start multiple instances of a sub-process. The system executes these instances independently from the parent process while still executing the parent process in accordance with the model.

In most cases, the **Multiple Execution** marker is used when a user needs to start a sub-process instance and still be able to work without suspending the parent process.

The **Conditional Operation** marker

You can sequentially add one or several conditions and specify the comparison operator. The conditions will be checked and if the result is **True**, the activity will be started; otherwise, **ELMA** skips the activity and the process continues using the default sequence flow.

You can specify conditions in a table or in a script.

The **Loop** marker

In the **Check Do-While Loop** specify whether the condition is checked before an operation or after it. Suppose the condition is not true when the process flow reaches the operation. **ELMA** will still perform this operation, if the condition is checked *after* the operation. If the condition is not true, and it is checked *before* the operation, **ELMA** will not execute it.

The operation will loop while certain condition is true. If the condition is not true, the process continues.

5.7.3. Process Statuses

ELMA offers one more option for business process monitoring - the process instance statuses. Statuses help to monitor the execution of the process stages.

A process instance status allows:

- searching process instances by status (advanced search parameter);
- creating user filters for the processes;
- sorting process instances by status (on the **Process Monitor** page in the **Display by Status** block).

To create process instance statuses, open **ELMA Designer** → **Processes** → on the process page click **Instance Statuses** (Fig. 127).

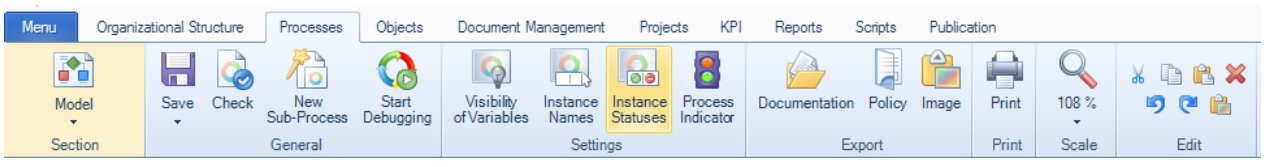


Fig. 127. The Instance Statuses button in the top toolbar

In the window that appears, click **Add Variable** to create a new variable that the system will use to determine and store the process instance status (when adding a context variable, use

the default settings). Click **Add status** button and type the new status name. You will see this variable in the list of context variables, on the **Context tab** of the process page (Fig. 128).

Specify the statuses of the **Leave Request** process instance. Use the following statuses: Pending Approval, Rejected, and Approved. In the status settings window, click **Add Status** and type the status names. Select an action in case the process is interrupted: click the **Select Action** button at the bottom of the settings window and select **Reset Status** (Fig. 128). Click **OK** to save the settings.

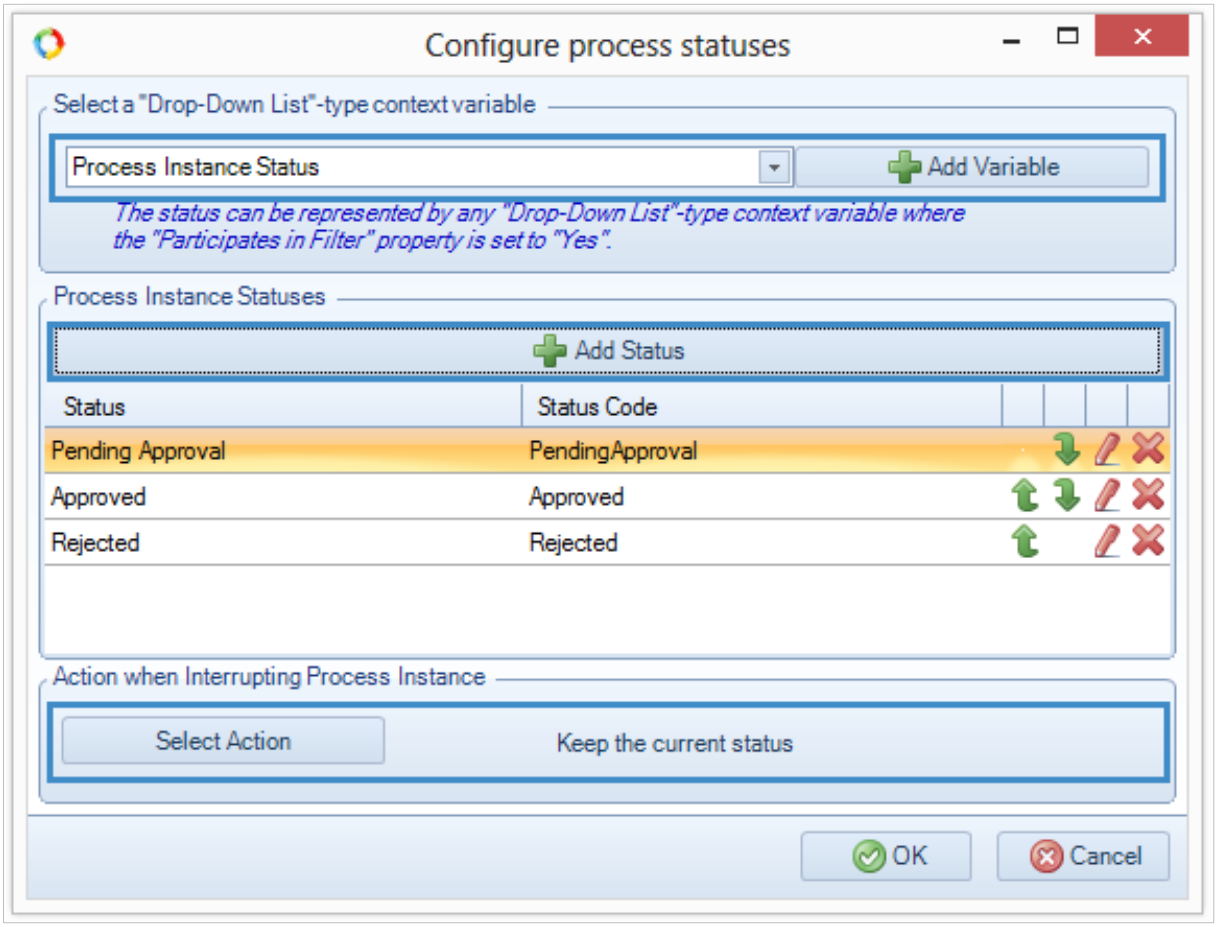


Fig. 128. Configuring the process statuses

You can change the process status:

- manually in the user task, if the context variable, which defines and stores the status, is shown on the task form and available for editing;
- in the process script;
- with the **Change Process Instance Status** plug-in.

When executing the process instance, the most convenient way to change its status is to use plug-ins. When using plug-ins, you are not required to create scripts or change statuses manually.

On the **Graphic Model** tab → on the side panel → in the **Plug-Ins** block → find the **Change Process Instance Status** plug-in and place it at the point of the process model where the instance must change its status (Fig. 129).

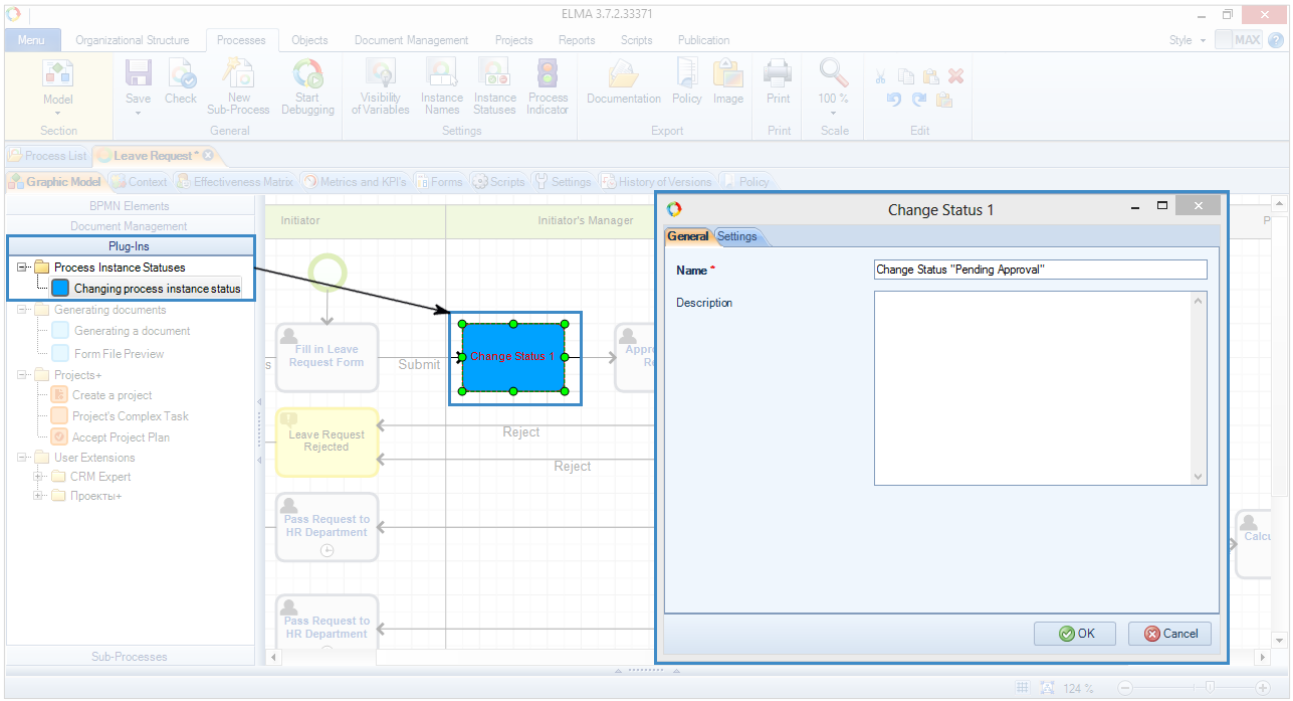


Fig. 129. Changing the process instance status with a plug-in

To configure the plug-in: double-click on this element in the process map. A window opens. Change the name (preferably, indicate the status that the process will receive at this operation) and go to the **Settings** tab. In the drop-down list, choose the status, which the process instance will receive at this operation (Fig. 130).

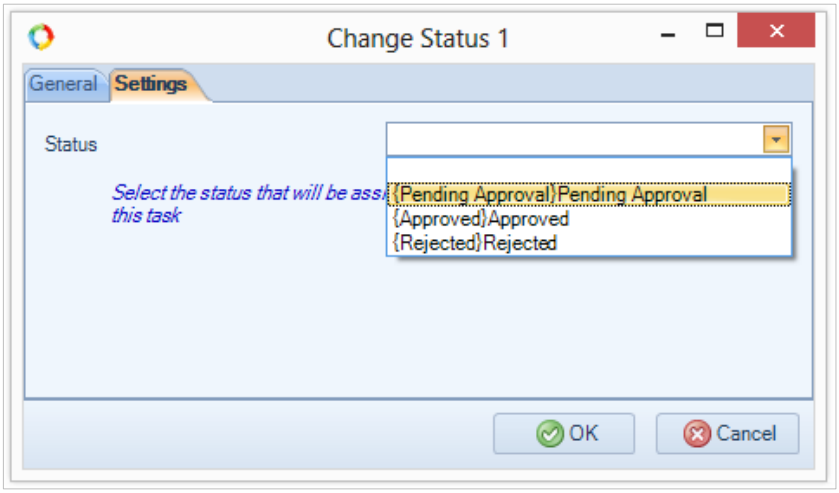


Fig. 130. The Settings tab → settings the Change Process Instance Status

After you have placed all the plug-ins to the graphic model of the **Leave Request** process, the process map looks as follows:

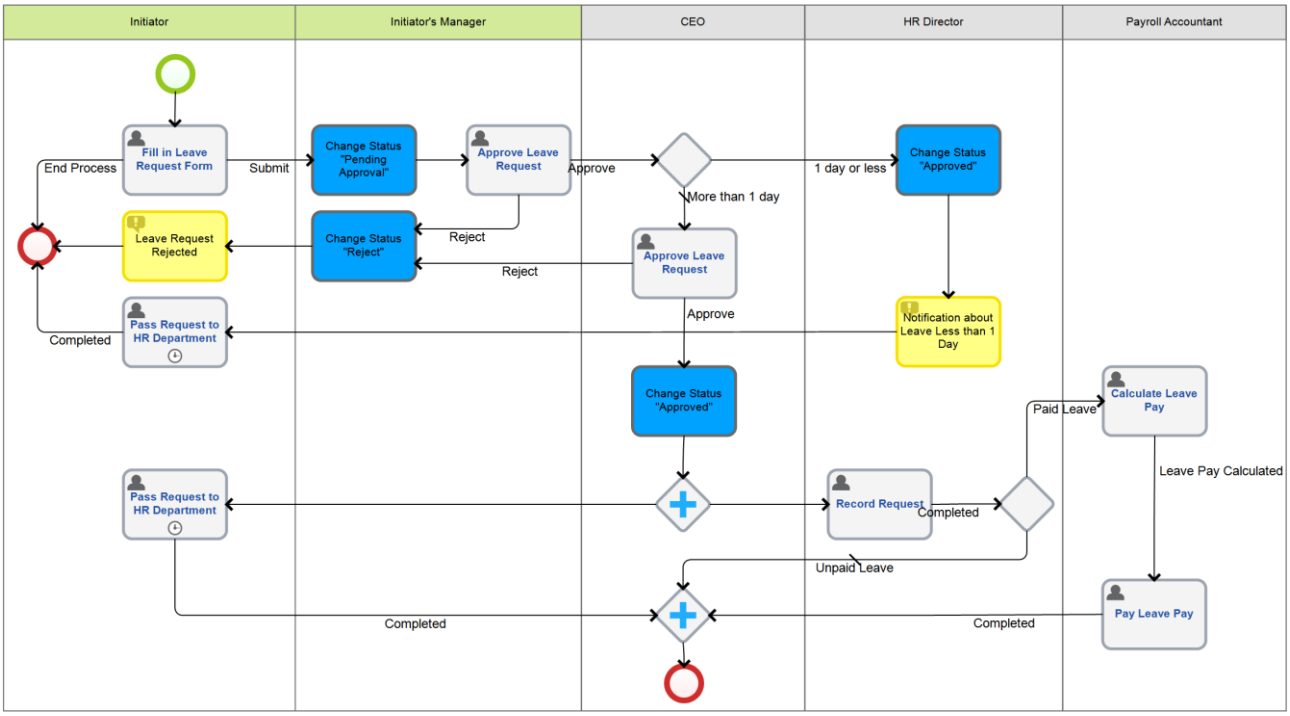


Fig. 131. The Leave Request process map with change status plug-ins

You must save and publish the **Leave Request** process to apply the changes. Now all the new process instances will change statuses.

Also now, in the **Process Monitor** you can monitor the process execution and search instances by statuses (Fig. 132).

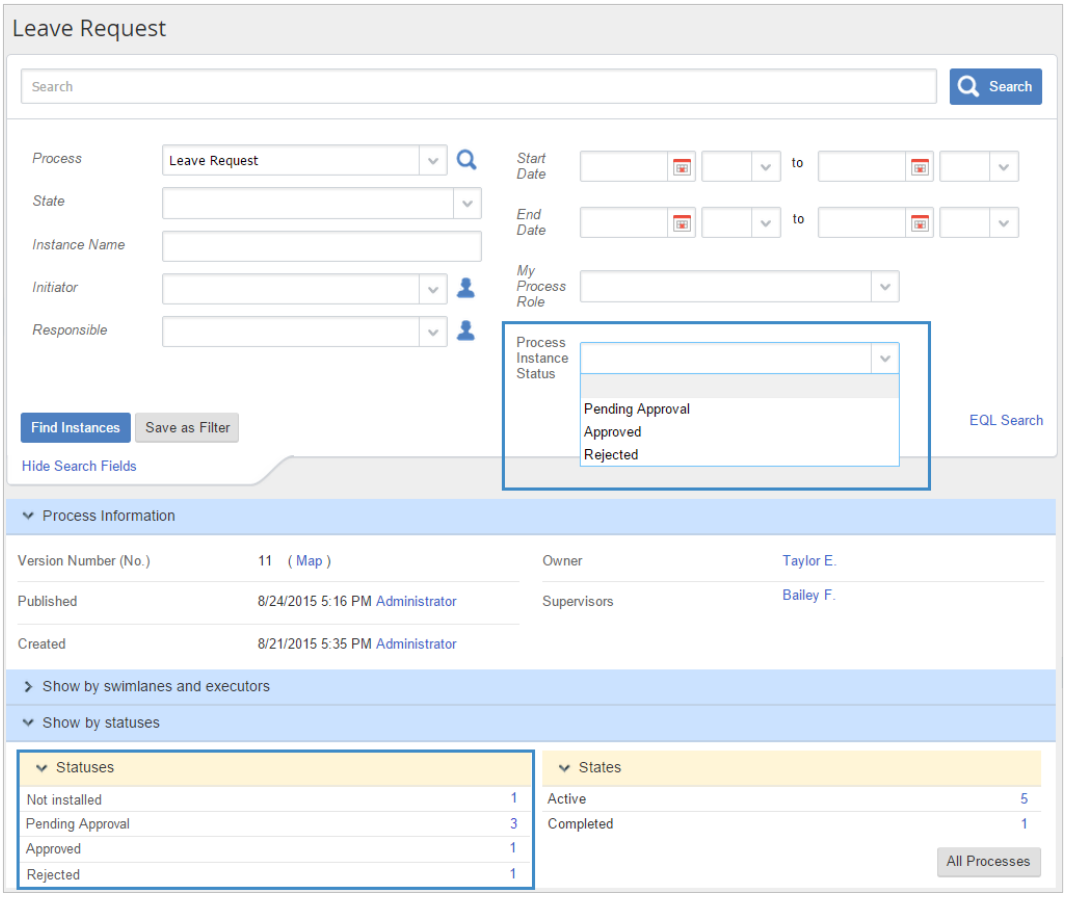


Fig. 132. The process instance statuses in the Process Monitor

In the **Statuses** section, you can see the update number of the processes with the specified statuses.

5.7.4. Using Triggers

When modelling business processes you can use **triggers** or causes in BPMN notation.

In **ELMA,** there are three types of events: the **start event**, the **intermediate event** and the **end event**. Start and intermediate events can have triggers. Such elements as user tasks or scripts can also have triggers to escalate the process flow (to continue the process execution automatically).

Within the start event, you can place the **Timer** trigger, which is the specific time when the process starts.

Within the intermediate event, you can place the **Timer** trigger or the **Calculate Metric** trigger. Use the first one to delay the process execution for a specific period and the second one to specify the process stage limits for metrics and KPI calculation.

With the User Tasks, Sub-Process, Wait for Message elements and the document management elements you can use **Timer** and **Script** connectors.

You can also use the connectors with the **Timer** and the **Process Error** triggers to link **Scripts** with other elements.

Below find the examples of the common triggers usage. Learn more about the triggers in **ELMA Help**.

5.7.4.1 Starting Business Process Automatically

ELMA can start business processes automatically.

Circumstances that trigger the start of a process are:

- A timer (time of the start event i.e. **ELMA** initiates the process at this specified time);
- An external event (**ELMA** starts the process with a web request or through a web service, from other information systems).

Timer trigger functions

This feature allows you to start processes on a regular schedule. For example, processes associated with the report submission or closing of the period, etc. This feature is also often used to synchronize the data with the third-party systems.

E.g., take a closer look at the **Weekly Reports of Managers** process. This process has the following description: every Monday, the Financial, Technical and Commercial Directors must send their weekly reports to the CEO for analysis. The process graphic model will look as follows (Fig. 133):

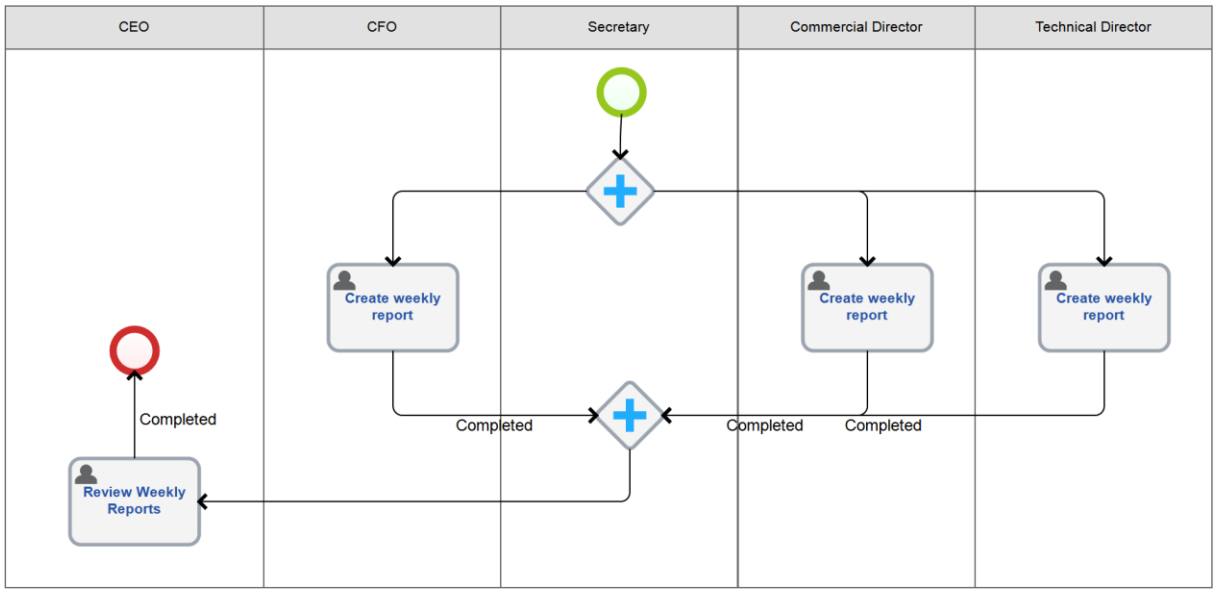


Fig. 133. The Weekly Reports of Managers process model

The start event of the process does not have additional settings yet. Therefore, the user who holds the position of the Secretary must start the process every Monday.

Configure **Timer** to trigger the start event automatically and exclude Secretary's weekly actions.

Double-click the start event → the settings window opens → enter a name → click **Change Trigger** button → select **Timer** → click **OK** (Fig. 134).

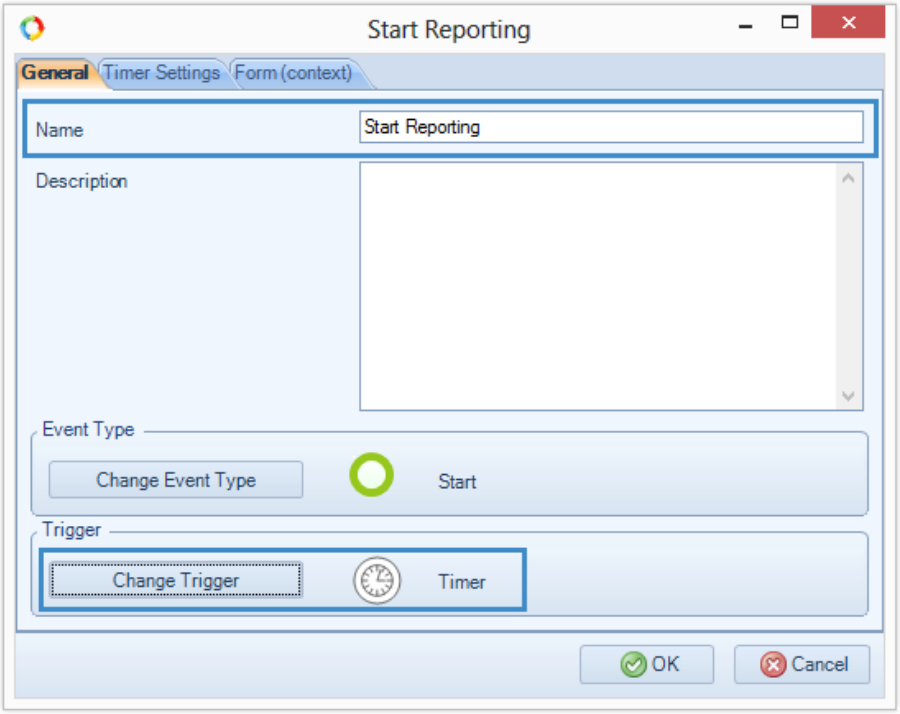


Fig. 134. Configuring the start event. The General tab

A new **Timer Settings** tab will appear at the top of the window. Go to the **Timer Settings** tab and configure the schedule as follows (Fig. 135):

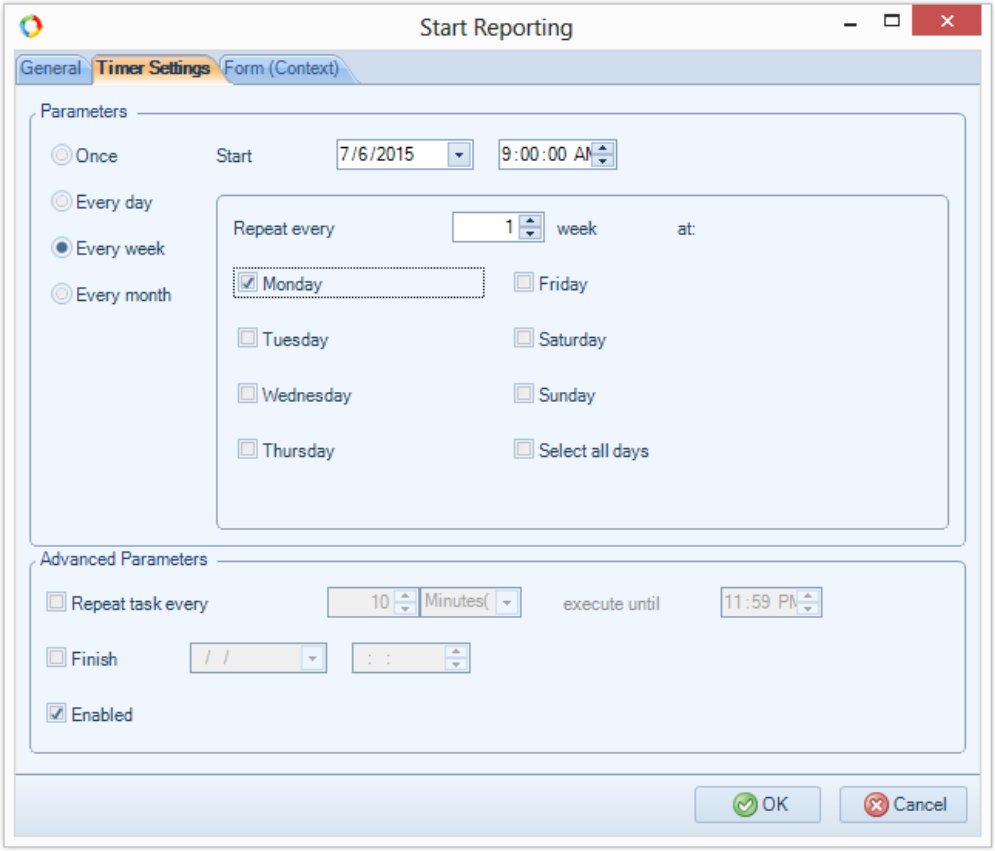


Fig. 135. Configuring the start event. The Timer Settings tab

In the **Start** field, specify the next Monday, select **Eevery week** →Repeat every Monday. To confirm settings click **OK**. Note that you must specify a future date (a date that has not yet occurred) to provide a correct first start of the process. Now in the center of the strat event you will see a clock  which represents the **Timer** trigger.

Configure the process instance name according to the template: Weekly Reports of Managers {Start date}. To do this, click **Instance names** → **Template** → in the input string type: Weekly Reports of Managers. Then click **Insert Variable** → **Context** → **Workflow Instance** → **Start date.** The template string will look as follows: Weekly Reports of Managers {$Context.WorkflowInstance.StartDate}. Click **OK**.

Save and publish the **Weekly Reports of Managers** process. Next Monday, **ELMA** will automatically start the process. Note, that **only static swimlanes** can contain the **Timer Start Events.**

In **ELMA Web Application**, you can see the start date/time of the new processes in **Administration** → **System** → **Scheduler** in the **Business Processes** unit (Fig. 136).

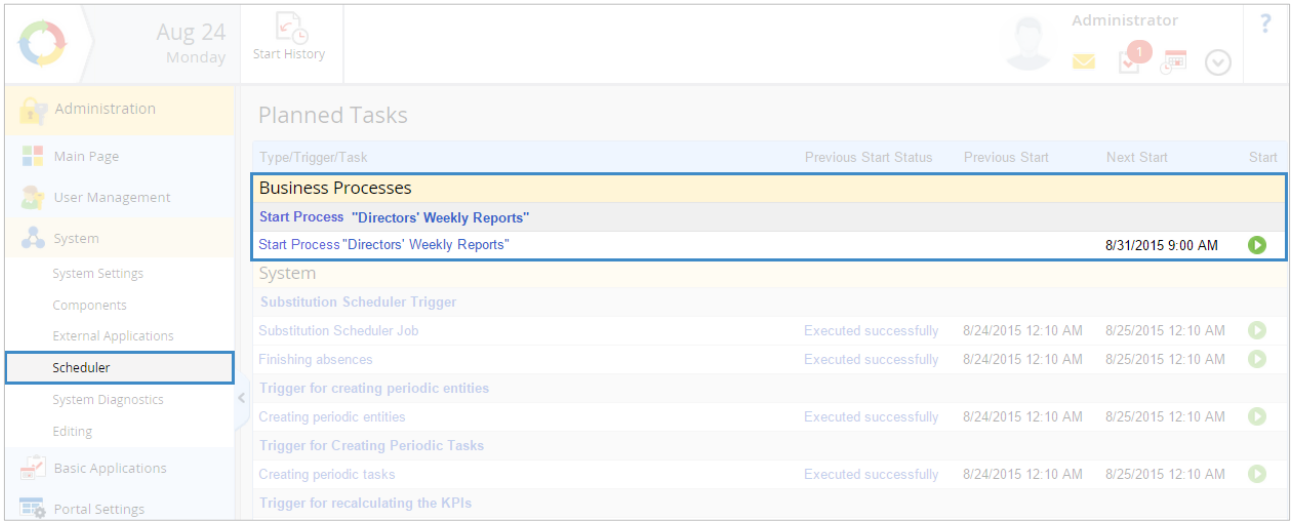


Fig. 136. ELMA Scheduler

It allows you to start the process out-of-schedule. Click the arrow in the green circle to the right of the process name. Click the process name to view the process start history.

5.7.4.2 Timer Intermediate Event

Timer Intermediate Events allow you to delay the process execution for a certain period. You can use them in different ways, but this paragraph describes one of the most frequently used.

Configure Timer for the **Leave Request** process. The payroll accountant has two tasks: **Calculate Leave Pay** and **Hand out Cash**. Place an intermediate event between these two tasks to delay payment until the start date of the leave.

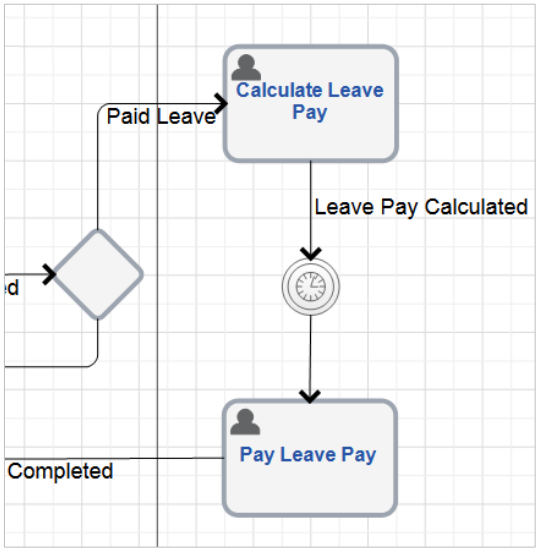


Fig. 137. An intermediate event with the Timer trigger

Click **Change trigger** button and select **Timer.** Then configure it as follows (Fig. 138):

- click **Change Start Type** → select **Exact time**;
- click **Change Time Type** → select **Context variable**;
- Context variable → **Start Date**.

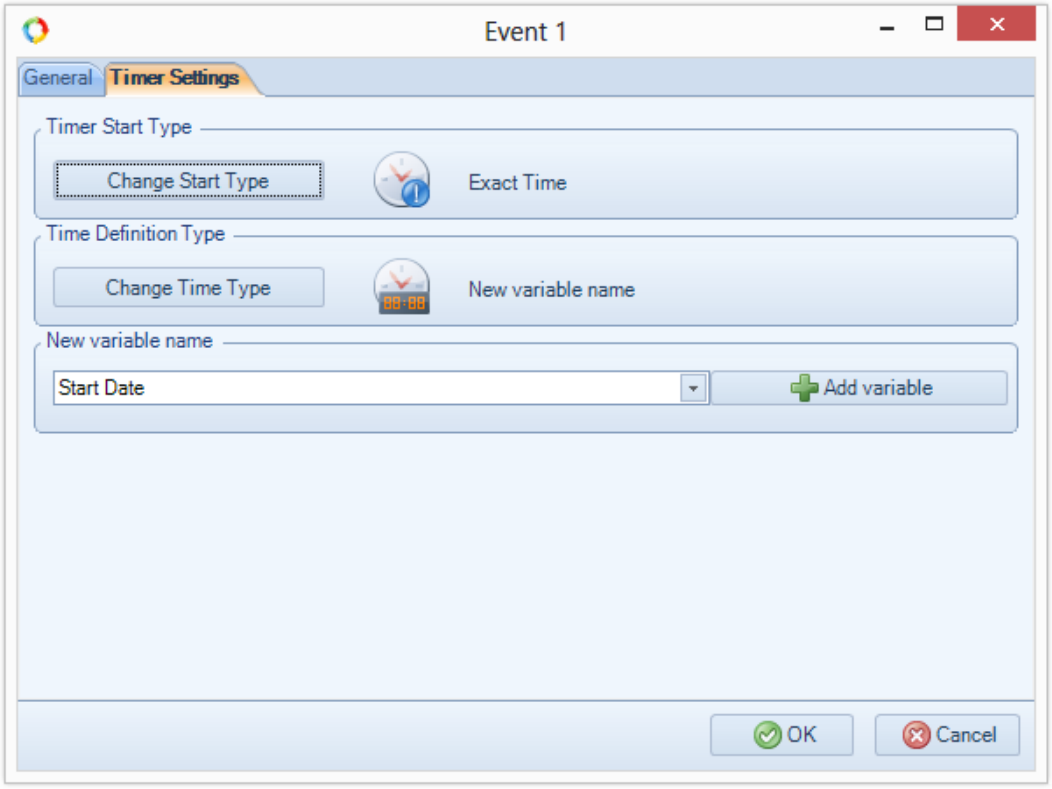


Fig. 138. Timer settings for an intermediate event

Save and publish the process. Now at this intermediate event **ELMA** will delay the execution of all the new instances until the timer goes off (the Start Date occurs). If the process arrives at the point where the **Timer** is placed, but the leave has already begun, **ELMA** will not delay the execution of the next task.

5.7.4.3 Escalation

Sometimes, when executing the business process, you will need to quit a task, for example, to continue process if a user task is overdue.

For such cases, **ELMA** offers the escalation mechanism.

To escalate the process means to automatically quit an activity when a timer goes off, or when a script condition or an error occur. Configure **Escalation** in the connector's settings.

The available escalation types are:

- **N/A** – quit the task when clicking the respective button in **ELMA Web-Application**;
- **Timer** - quit the task when the Timer goes off;
- **Exception Handling** - quit the script if an error occurs and send relevant notification to the selected users. This option is only available for the outgoing script connectors;
- **Script** - quit the task if the script is true.

To select escalation type in the Connector settings window, click the **Edit** button. To specify the escalation conditions open the **Timer Settings** tab or the **Script Settings** tab.

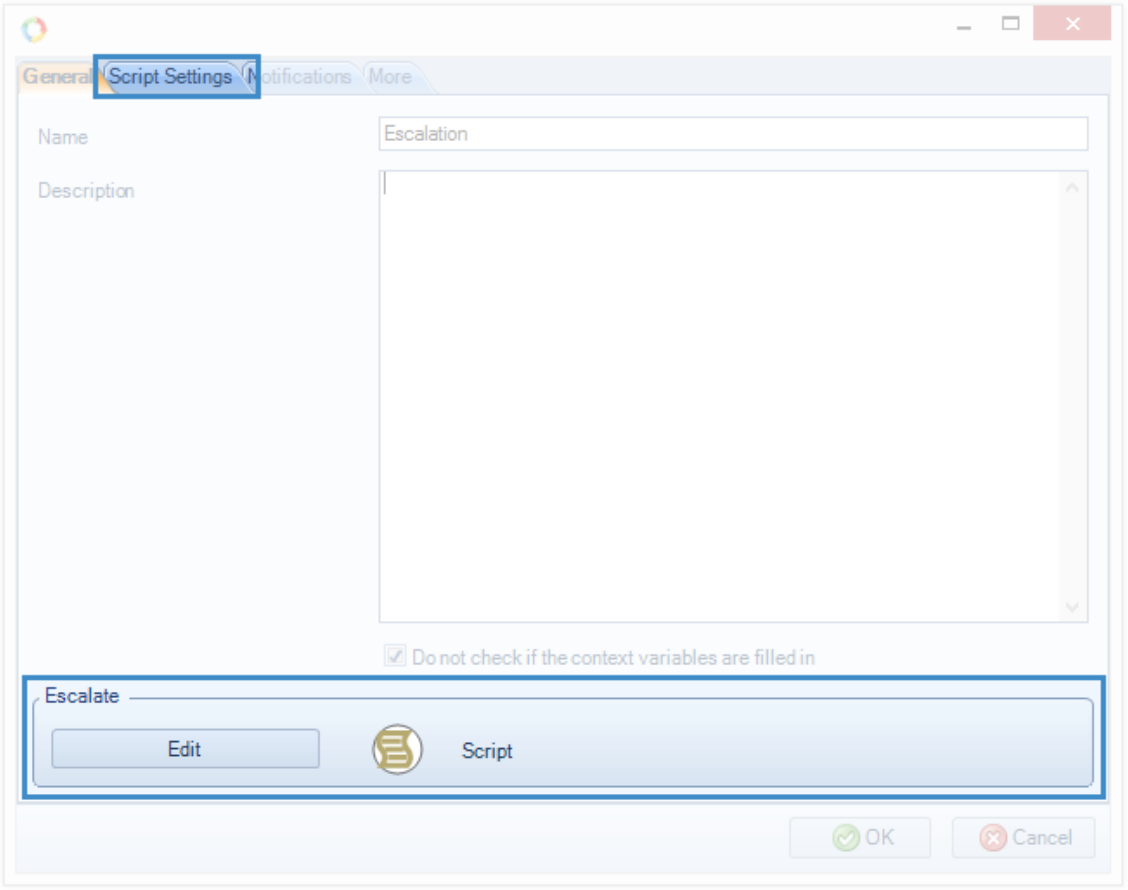


Fig. 139. Configuring a connector. The General tab

For the **Weekly Reports of Managers** process, configure escalation for the managers' tasks. According to the process model (Fig. 133) *all* the managers must complete their tasks (**Prepare Weekly Report**), before the system sends these reports to the CEO (**Review Weekly Reports**). Configure the connectors that will escalate the process if the **Prepare Weekly Report** task is not completed within 4 hours.

For each manager's task, draw an additional escalation connector with the **Timer** trigger. Fig. 140 shows the required connector settings.

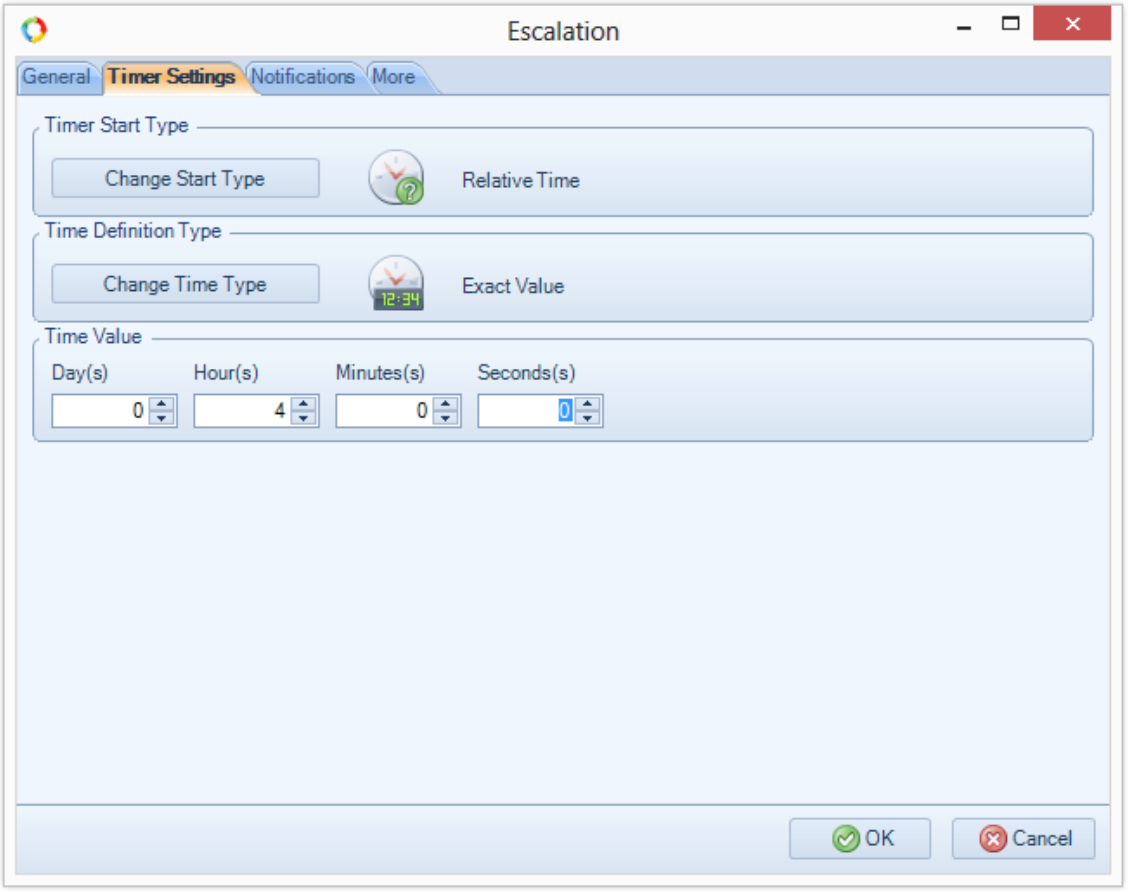


Fig. 140. Configuring escalation with the Timer trigger

Now the map of the **Weekly Reports of Managers** process will look as follows (Fig. 141):

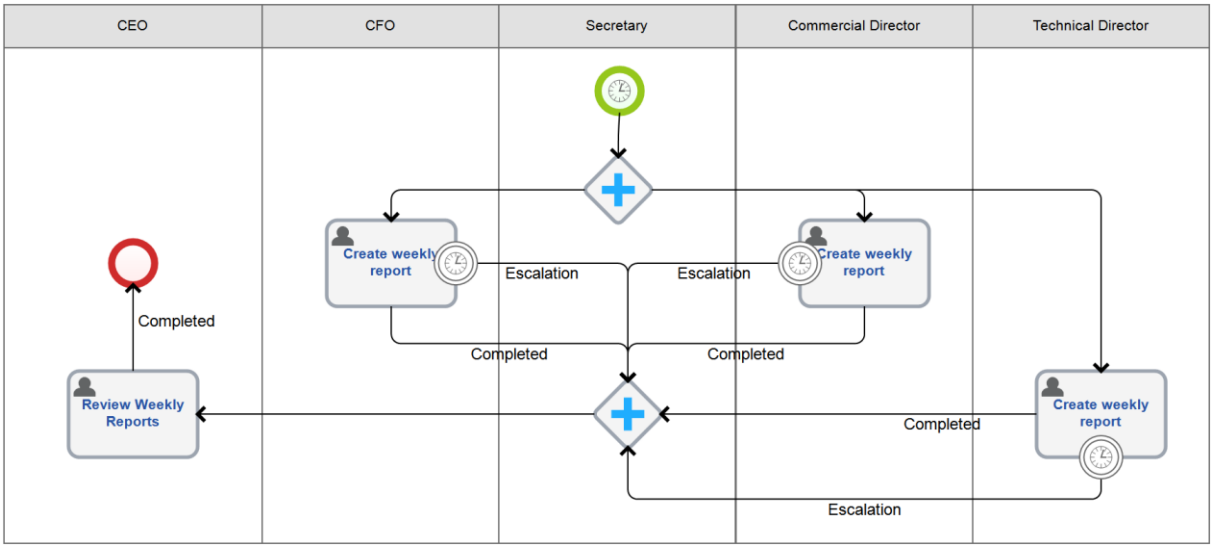


Fig. 141. The map of the Weekly Reports of Managers process with the task escalation

Save and publish the process. Now, if the managers do not complete the **Prepare Weekly Report** tasks within 4 hours, the process escalates and the **Review Weekly Reports** task is assigned to the CEO.

5.7.5. Scripts

In ELMA BPM, **Scripts** offer additional possibilities for business process modelling. **Scripts** allow optimizing certain tasks that otherwise would be executed in manual or semi-automatic mode. **Scripts** are intended for those operations that cannot be represented with the standard activities in **ELMA Designer**.

A **Script** in **ELMA** is a named C# code fragment that can be accessed from the other program modules.

The **Scripts** are widely used in ELMA BPM. **Script Builder** (available in **ELMA 3.6** and higher) is a visual script editor that makes the work with scripts more convenient. Analysts who design business process models and do not know C# can use **Script Builder** to easily create simple scripts required to execute processes.

This section describes how you can use scripts when modelling business process.

5.7.5.1 Script Task

You can use a **Script** task if you want **ELMA** to perform some tasks automatically when the process arrives at certain points (between two user tasks, at the start event or after the process is complete).

To add a **Script** to the business process, open **ELMA Designer** → **Processes** → **Process List** → **process name** → **Graphic Model** tab → in the left toolbar find **Script** → place **Script** in the desired location in the process model. Double click on the **Script**, the **Script** settings window opens. Open the **Script** tab and enter a name (in the process map the script will be displayed with this name), and a description. Click **Create** (Fig. 142).

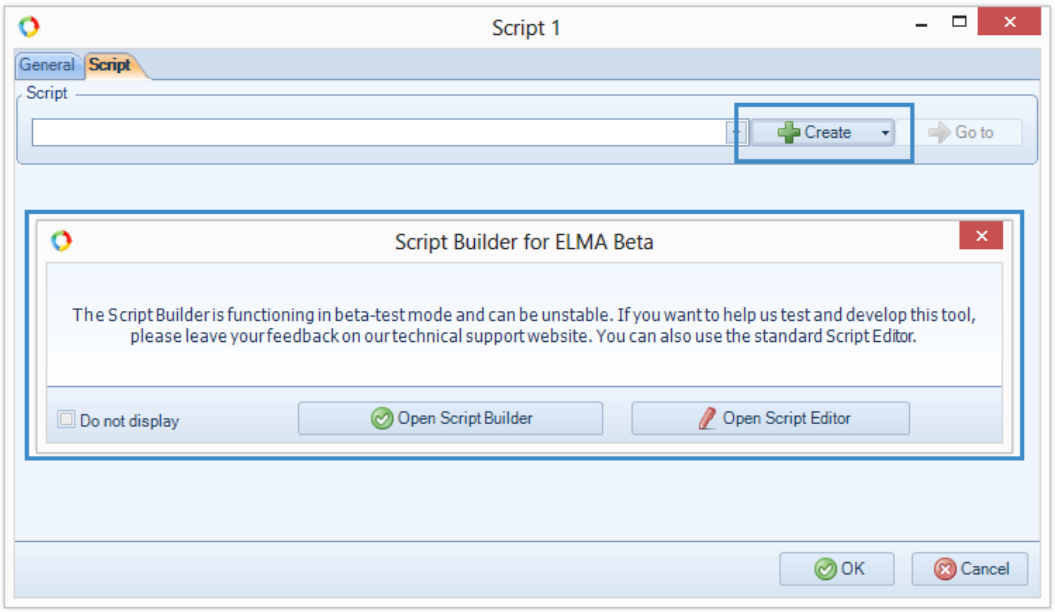


Fig. 142. Creating a script

In the window that opens, select the script creating method:

- **Open Script Builder** – create a script with graphic elements (used for simple calculations);
- **Open Script Editor** – create a C# code script.

Then, enter the name of the new script: use numbers and letters of the Latin alphabet (Fig. 143).

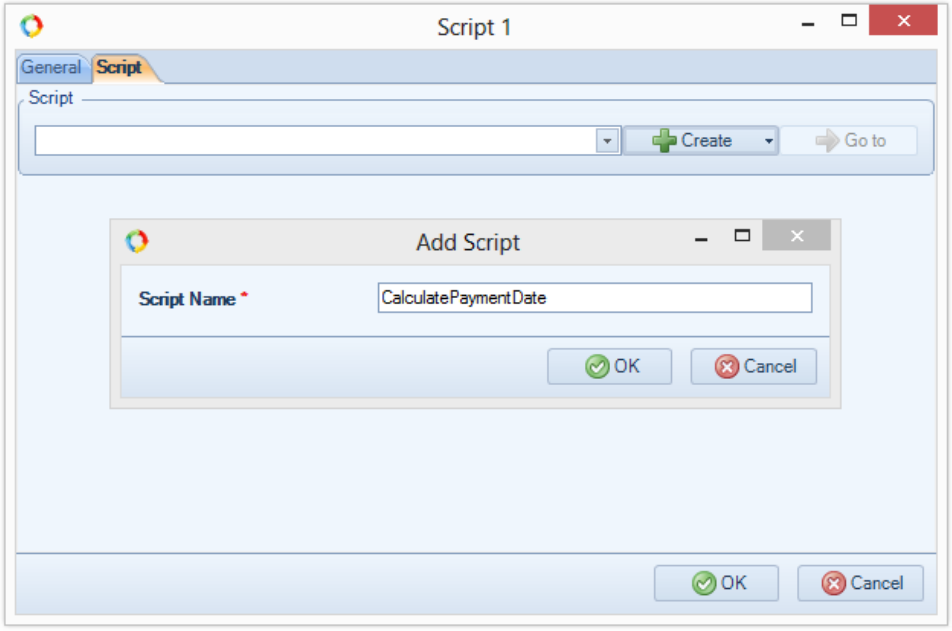


Fig. 143. Script name

Click **OK**. The **Go To** button becomes active. Click it to create a C# code script.

All the process scripts are available in **ELMA Designer** → on the process page → in the **Script** tab. The new script will look as follows:

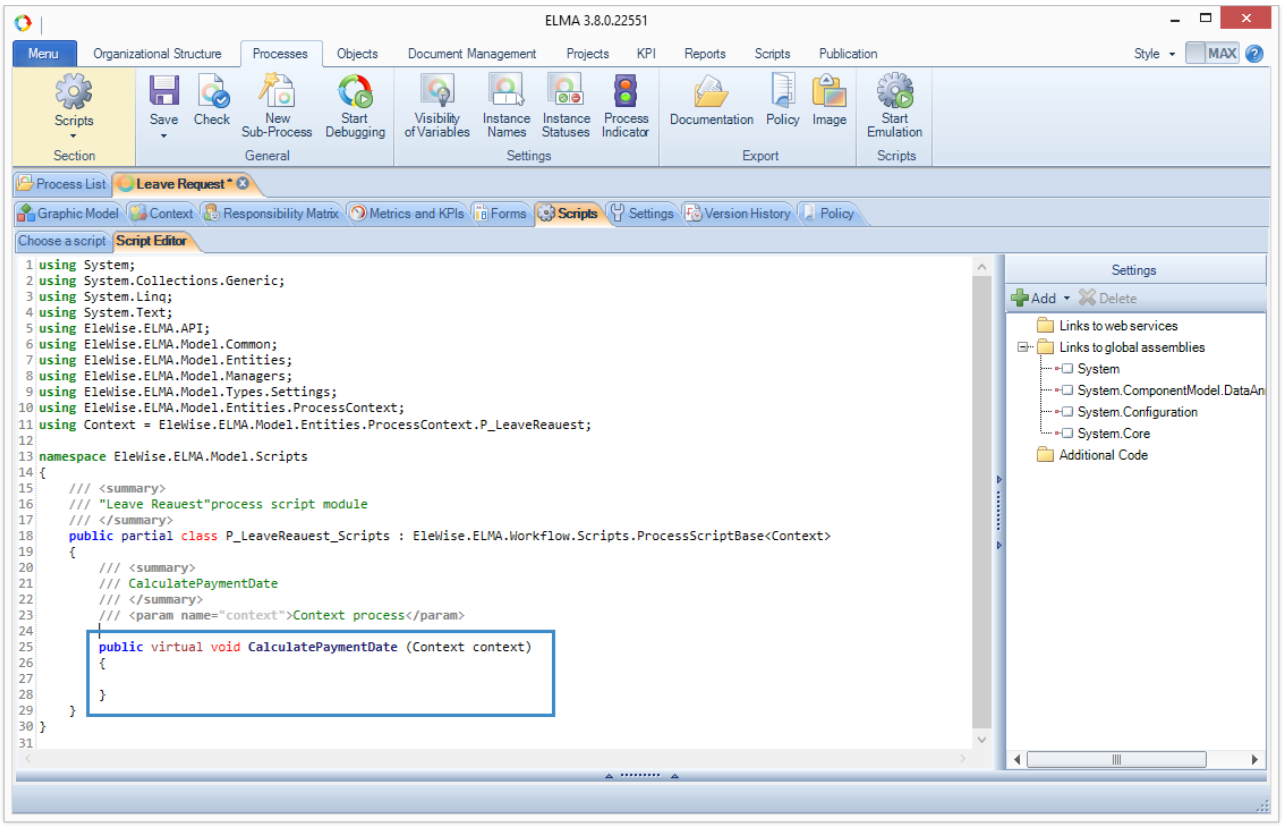


Fig. 144. ELMA Designer → process page → Script tab

You must enter the code between the two curly brackets, after the **public void Script Name (Context context)** string.

Create a simple script to calculate the date when the accountant must hand out cash in the **Leave Request** process. The process has the **Timer** that delays the **Pay leave pay** task until the leave start date. However, normally the Leave Pay is paid before the leave start date. Thus, you must add another context variable: **Payment Date**, type: **Date/Time**, and calculate its value automatically.

Suppose the Leave Pay must be paid one week before the start of the leave.

In **ELMA Designer** → **Leave Request** process tab → **Graphic Model** tab → in the **Payroll Accountant**'s swimlane place the **Script** between the **Calculate Leave Pay** task and the **Timer**. Click **Timer** to specify the new context variable: **Payment Date** instead of **Start Date**.

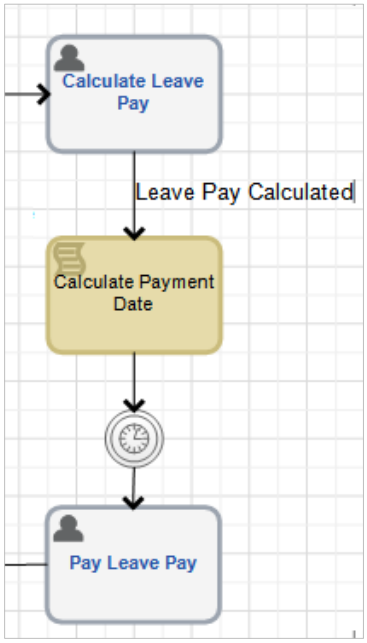


Fig. 145. The Script element in the process map

Configure the **Script**. Double-click the **Script** and enter a new script name **CalculatePaymentDate** (Fig. 142, Fig. 143). In the **Script** settings window → click **Go to** button to go to the script code. Since the **Payment Date** value is the **Start Date** minus one week, the script text is:

C# Code

```
public virtual void CalculatePaymentDate (Context context)
{
        context.PaymentDate = context.StartDate.Value.AddDays(-7);
}
```

"PaymentDate" and "StartDate" are the names of the context variables **Payment Date** and **Start Date**. If your context variables have other names, you must use them in your script.

The context variables are accessible through the *context* and can be referenced within the script. The code editor window supports Intellisense technology that gives contextual help in writing code. When you type a dot after a *context*, a list of all the available methods and parameters opens, so you will not have to write out the whole item. (Fig. 146).

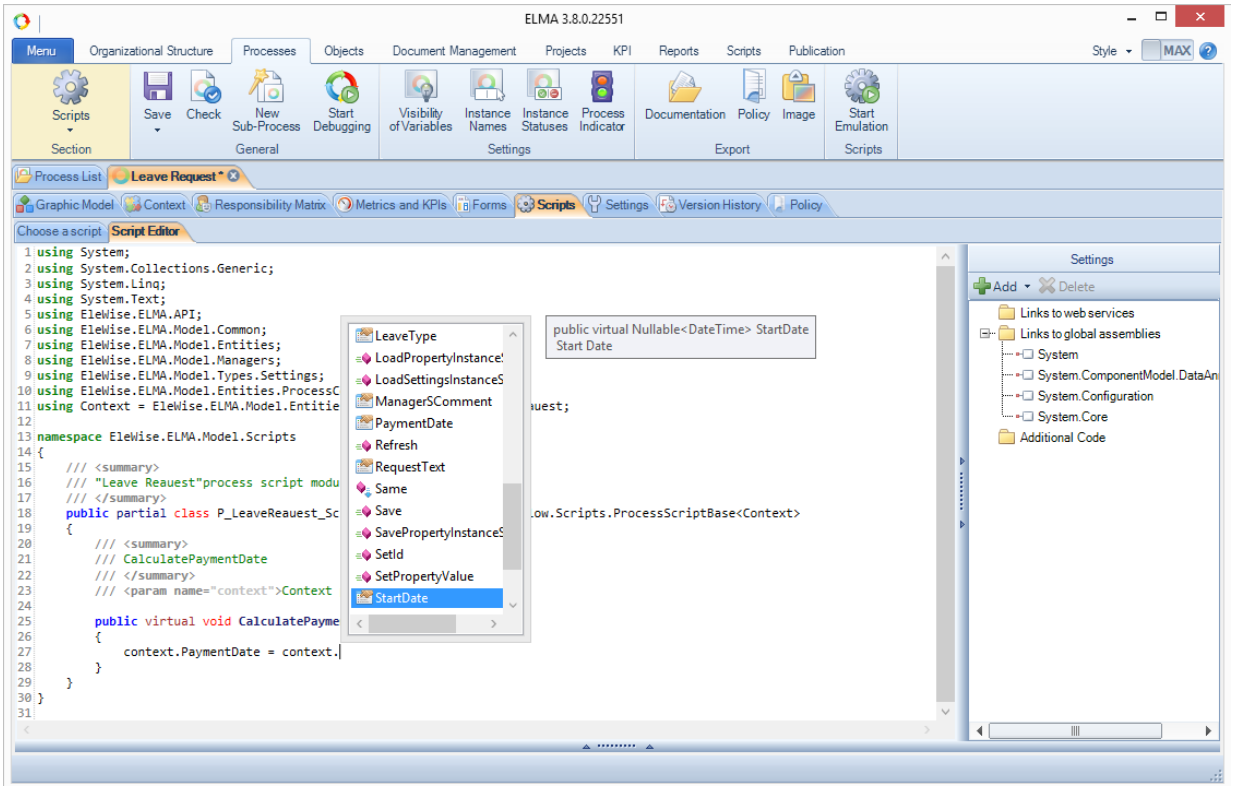


Fig. 146. Viewing the list of methods and parameters of the context variable

To check the script syntax click the **Check** button on the toolbar. You can also check the script by clicking **Start Emulation** button. (Find more information in **ELMA Help**).

After you have created and checked the script, save and publish the **Leave Request** process. Now the **Timer** between **Calculate Leave Pay** and **Pay leave pay** will go off one week before the leave start date.

5.7.5.2 Script on Changing Variable Value

You can use scripts in other ways without placing and configuring **Script** task in the process graphic model.

If the variable values in user tasks change you can use scripts to do calculations, determine object properties or change the display of certain fields depending on the values of other fields.

To create a script that activates when the value of a variable changes, you must configure the form of the required task. To do this, double click on the task → **Task settings window** opens → go to the **Form (Context)** tab → click the variable that will change and activate the script → variable settings window opens → go to **Advanced** tab → click **Specify Script** to add a script (Fig. 147).

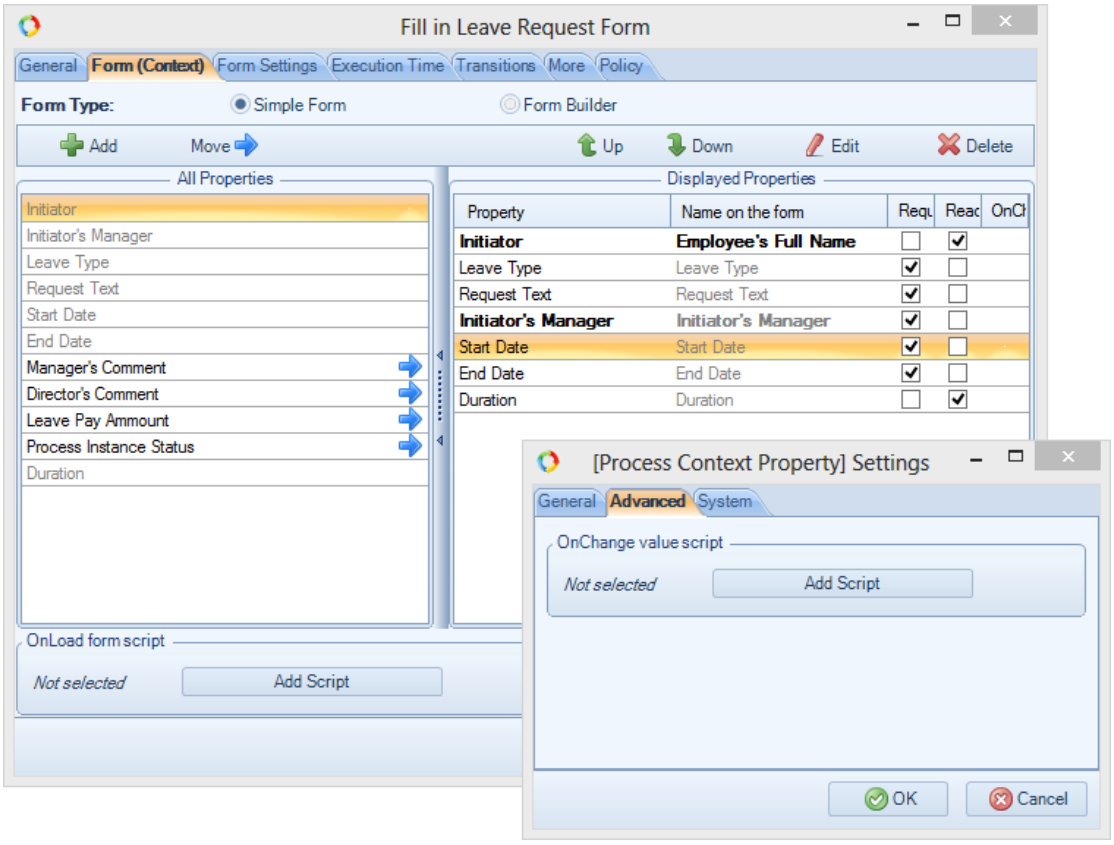


Fig. 147. Configuring a process context property

Then, create a new method (click **Create** button) and write a code.

In the task settings window, you will see icon displayed in the **Scripts** column, next to the variables that activate the script (Fig. 148).

E.g., create a script that will calculate the leave duration (in days) in the **Leave Request** process. To do this, add a new variable to the process context: **Duration**; type: **Integer**. Then add it to the form of the first task and mark it as **Read Only** (Fig. 148).

Create a script that activates when the **Start Date** and the **End Date** values change (Fig. 147, Fig. 143). The script name is **CalculateDuration**. The script text is as follows (the text after // is a code comment and it is not executable):

C# Code

```
public void CalculateDuration (Context context, EleWise.ELMA.Model.Views.FormViewBuilder<Context> form)

{

//to calculate leave duration both dates are required, therefore, make sure that the fields are not left blank
```

```
if (context.StartDate != null && context.EndDate != null)
// and - if they are filled in - calculate the duration
    {
    // add a new time variable to store the time span between two dates
        TimeSpan HowTime = context.EndDate.Value - context.StartDate.Value;
        // calculate the number of days between the two dates. If the dates are equal,
        then the number of days is 0, then add +1 to the calculated value
        context.Duration = HowTime.Days + 1;
    }
}
```

Use this script on changing of both variables (the **Start date** and the **End date**).

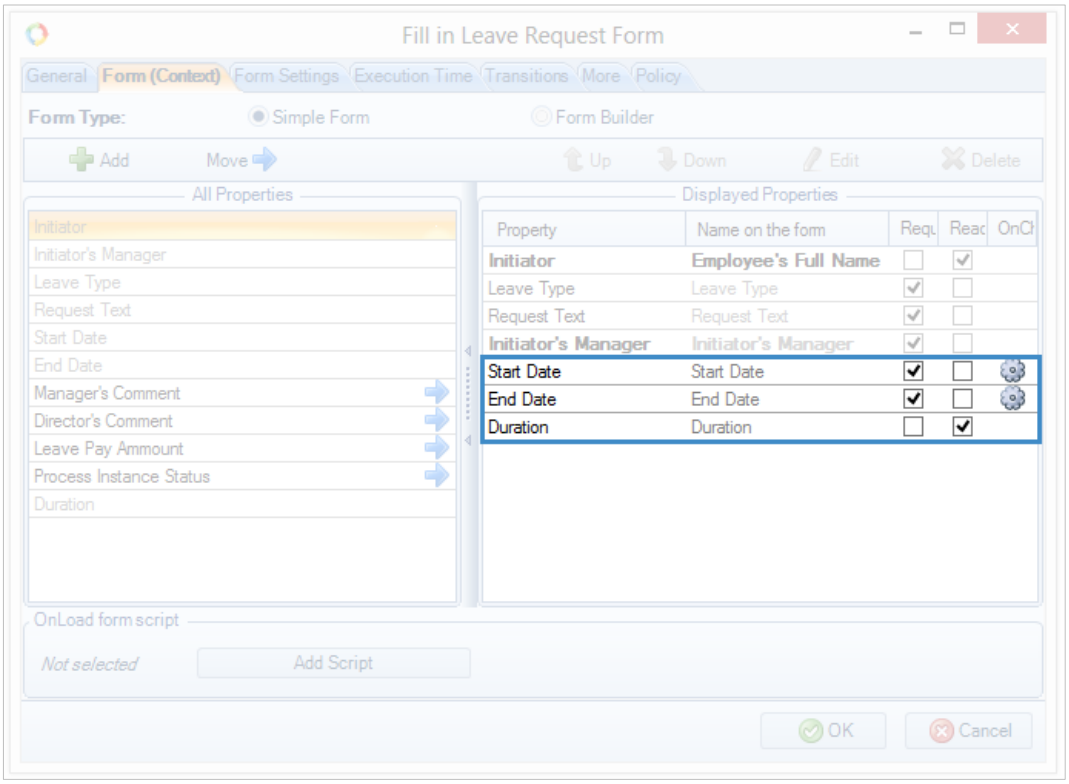


Fig. 148. A variable with a script icon

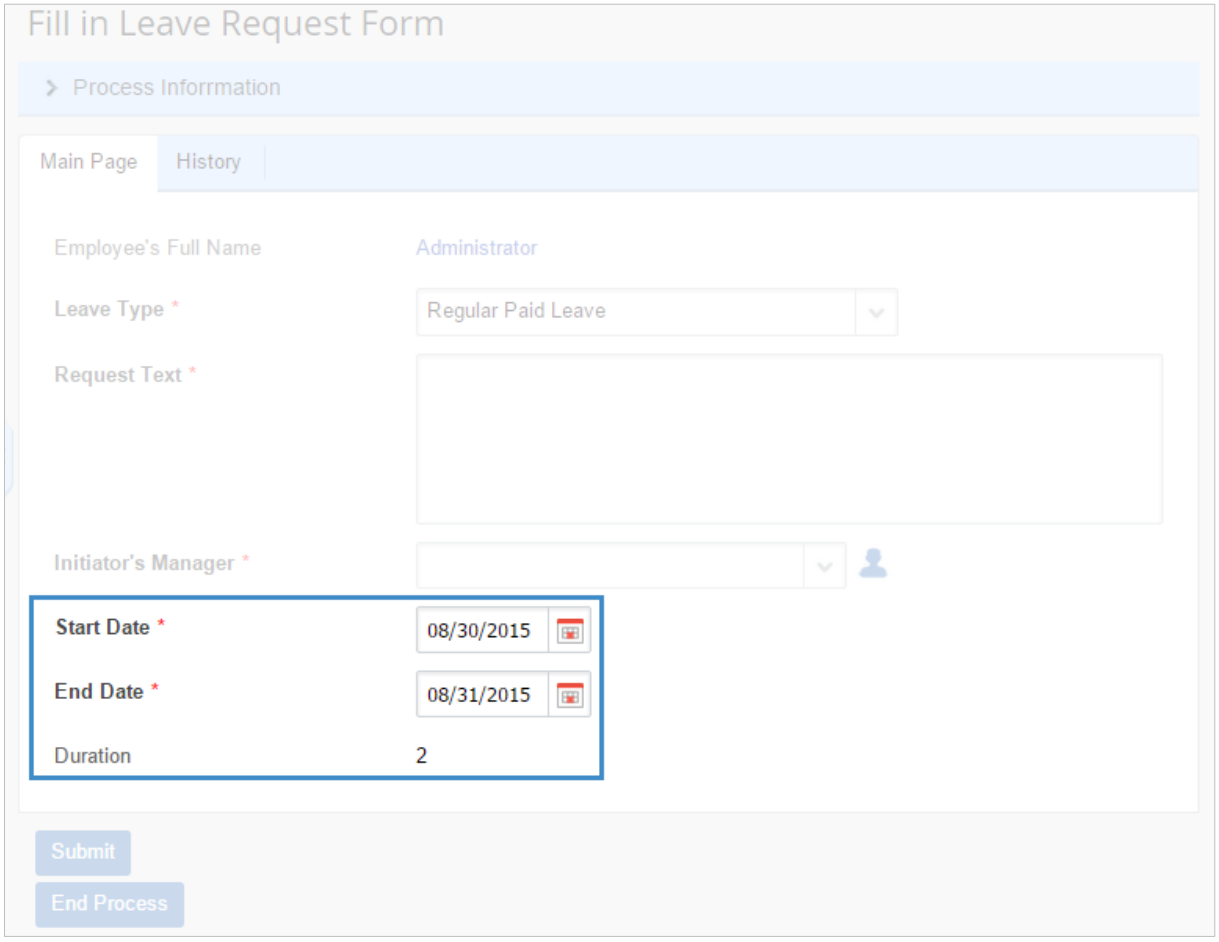


Fig. 149. The script-calculated variable value in the task form in the web application

After you have saved and published the process, **ELMA** will calculate the leave duration on the form of the first task according to the specified dates (Fig. 149). Note that **ELMA** calculates the **Duration**, if you change at least one of the date variables.

You can also use scripts on changing variables to control the display of the context variables in the task form (dynamic task form). Such scripts are very similar to the form loading scripts. That is why in the next section they are considered together.

5.7.5.3 Form Loading Scripts

ELMA can execute scripts when loading task forms in business processes as well as when loading document forms and objects. Here you will find only an example of a script on loading a process task form.

In the scripts on loading a task form, it is recommended to configure only the user task form (normally you define how the variables will be displayed on the form). Use separate script blocks or scripts on changing variable value to do all the calculations that affect the process context.

E.g. Configure a script on loading a process task form. Open the task page → **Form (Context)** tab → if you have selected **Simple Form** type → click **Specify Script** (Fig. 150). If you have selected **Form Builder** → click **Form Settings** on the toolbar to configure the script on loading a task form (Fig. 151). Find more information about the task forms in p. 5.7.6.

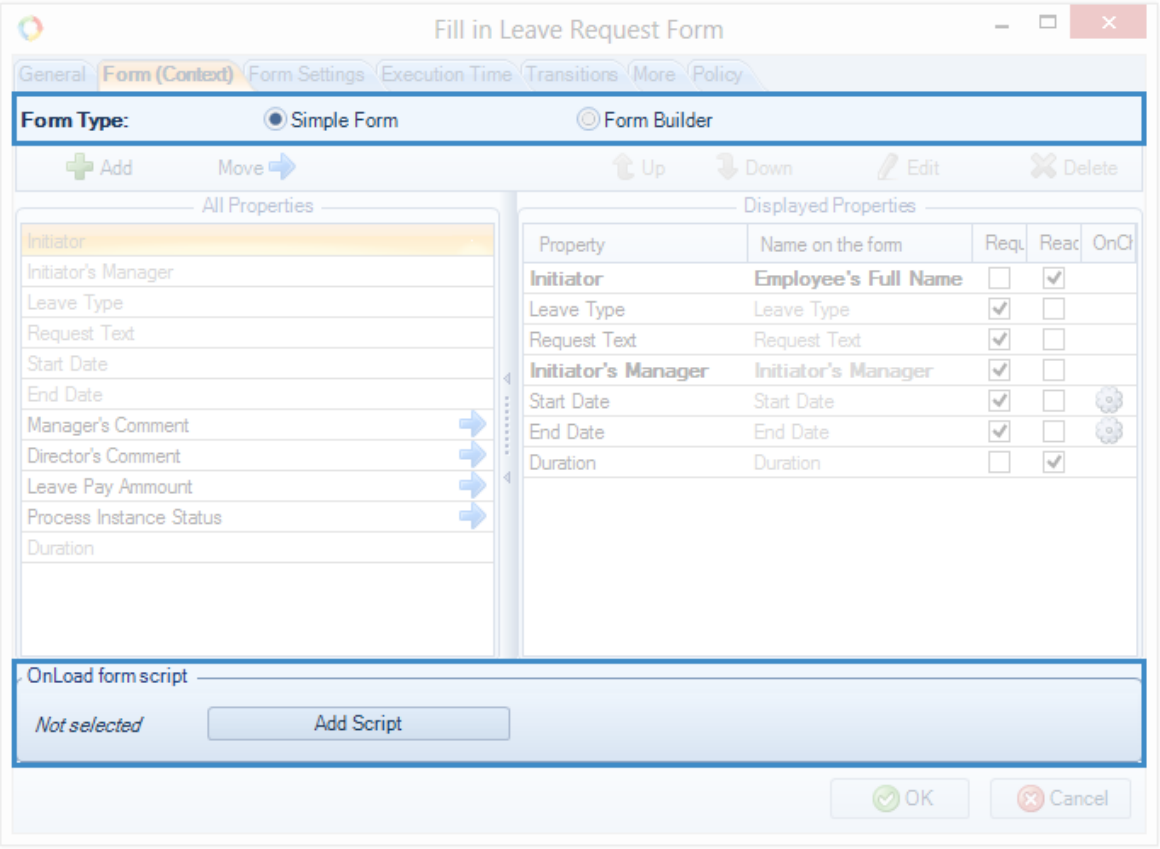


Fig. 150. The location of a script on loading a simple form of the user task

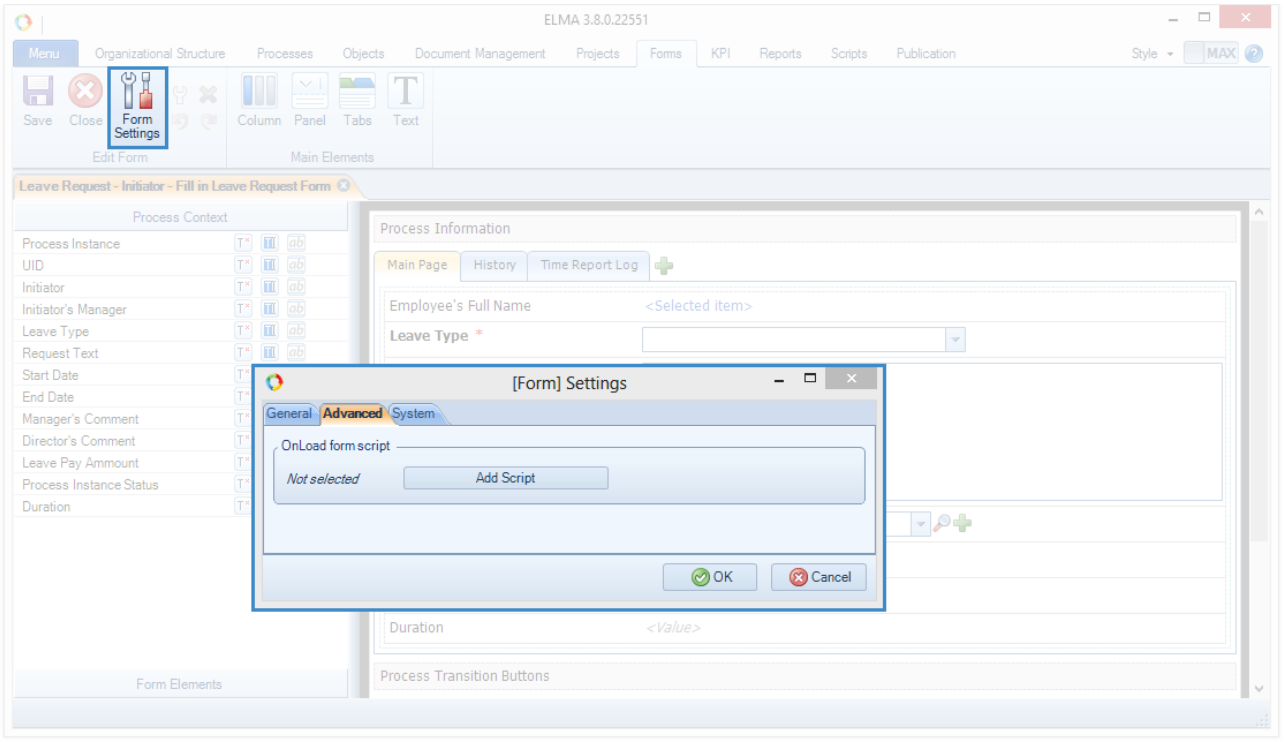


Fig. 151. The location of a script on loading a user task form

Configure the **Fill in Leave Request Form** task form for the **Leave Request** business process. Add a context variable - **Reason** - to the process (data type: string). It will be shown in the form of the first task without **Read Only** and **Required** options.

The form will change as follows:

- if the **Leave Type** is **Unpaid Leave**, the user will see the required **Reason** field in the task form;
- if the **Leave Type** is **Regular Paid Leave**, the user will not see the **Reason** field as it is not required to fill in.

Create a script on loading the form of the first task; script name is **LoadingForm**; script code is:

C# Code

```
public void LoadingForm (Context context, EleWise.ELMA.Model.Views.FormViewBuilder<Context> form)

{

   if (context.LeaveType.Value == "Unpaid Leave ")

      form.For(c => c.Reason).Visible(true).Required(true);
```

```
    }
    if (context.LeaveType.Value == "Regular Paid Leave")
    {
      form.For(c => c. Reason).Visible(false).Required(false);
    }
}
```

The variable has three display properties that can take TRUE or FALSE values:

- **Visible** – variable visibility (true – visible, false – hidden);
- **Required** – required to fill in the variable (true – required, false – not required);
- **ReadOnly** – can/cannot be edited (true – read only, false – editable);

The **Leave Type** variable is defined when the process starts. By default, it is **Unpaid Leave**; therefore, **ELMA** must execute the script as soon as the form is loaded for the first time. You can use the same script on changing the **Leave Type** variable when filling in the task form. It means that, if the user selects **Regular Paid Leave** as the **Leave Type**, **ELMA** will execute the script and will hide the **Reason** variable.

Showing/hiding variables scripts on loading forms or on changing variables allows flexibility in changing task forms, improves the usability of business processes and minimizes errors in their execution.

5.7.6. Task Forms

When you create a new user task, it has the default task form: all the variables moved to the task form are shown in a single list, in the order specified in the task settings in **ELMA Designer**.

To customize the display of the context variables you can use the **Form Builder**. You can configure interfaces of the business process tasks with **Form Builder** even if you don't have special skills.

5.7.6.1 Creating Task Form in Form Builder

To create a new form: in the **task settings window** → in the **Form (context) tab** select **Form Builder** → click **Create New Form** button. A window opens. The system will automatically generate a **Form name** (adjustable). Click **OK** to confirm creation of a new task form. (Fig. 152). At any time, you can change the **Form type** and select **Simple Form**. If the task forms have been created earlier, you can select from the existing ones.

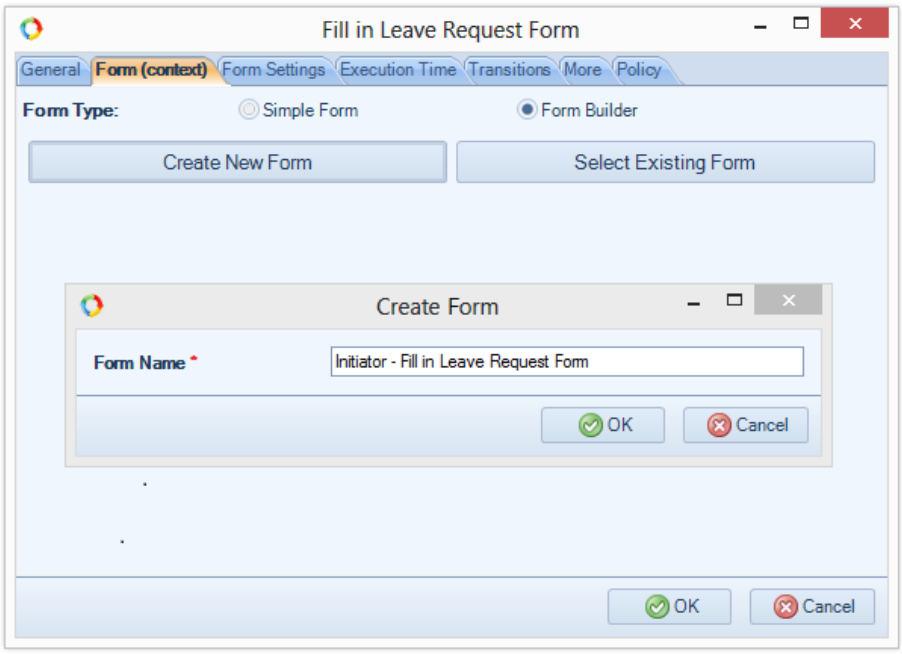


Fig. 152. Creating a new task form in Form Builder

If you have moved some variables to the **Displayed Properties** list, when configuring the task, you will see these variables in the new form created in the **Form Builder**. Click on the form image in the task settings window to configure the form (Fig. 153).

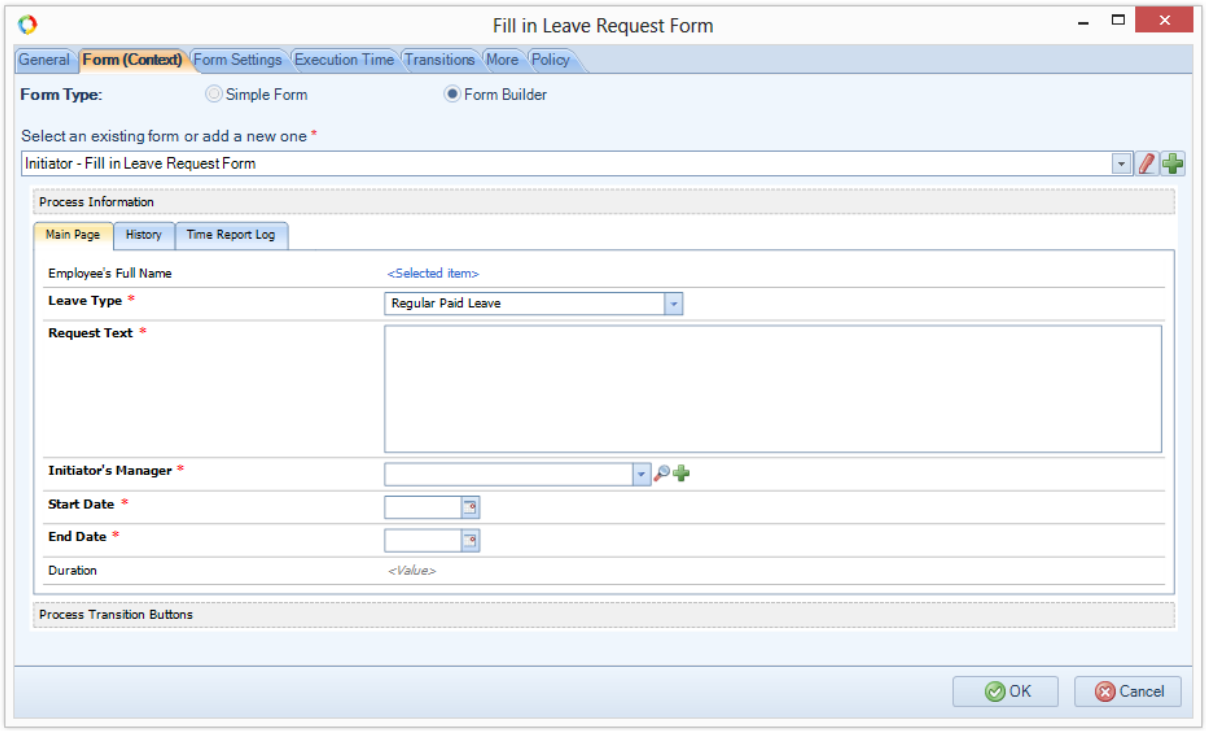


Fig. 153. The Form (Context) tab when using Form Builder

An example of the form edit window is shown in the Fig. 154. In **ELMA Designer,** you can edit forms on the **Forms tab** (Fig. 154). By default, this tab is hidden. The **Forms** tab becomes visible when you create and/or open one of the object forms. On this tab, you can open several forms at the same time.

Use the top and side toolbars to edit the form interface by adding and/or removing various properties and elements.

On the top toolbar you can find buttons that allow to save and delete form settings, undo and redo the last operation with the form, add columns, panels, tabs, and text to the form.

Use **Panel** and **Tab** to group task context and hide information in a collapsible panel or a separate tab. A well-configured form makes the task easy to understand and helps to execute it correctly.

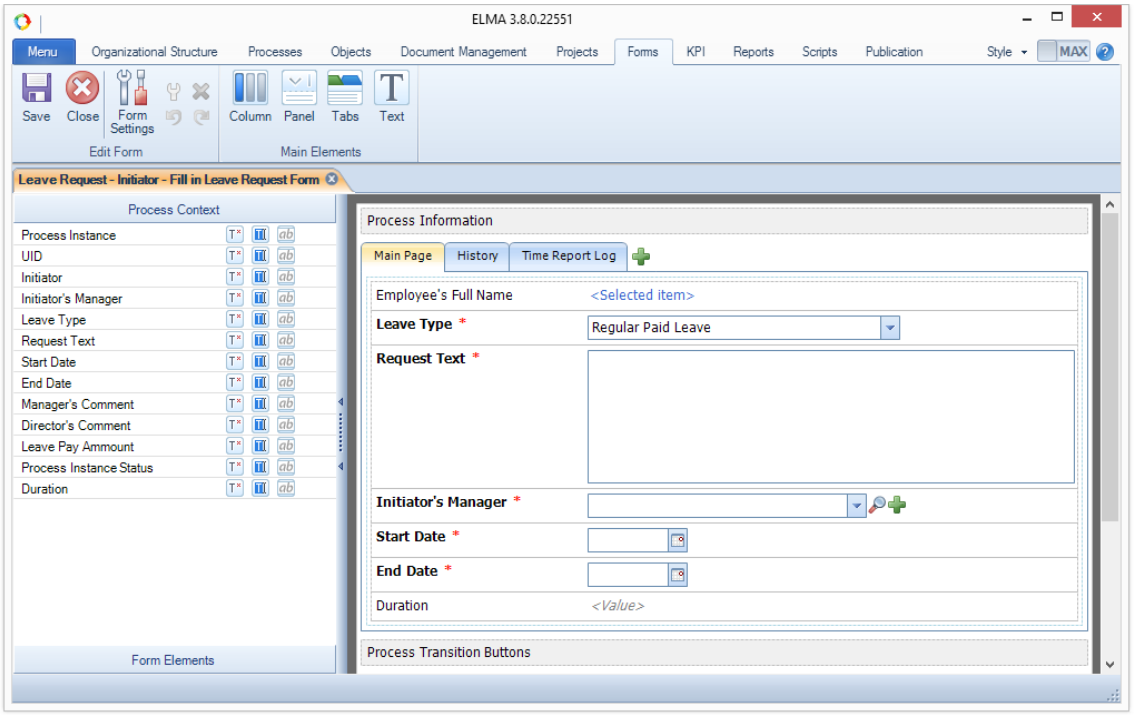


Fig. 154. A task form in Form Builder

The left panel shows all the process context variables and the additional form elements that you can use to create a form. The panel has two tabs: **Process Context** and **Form Elements**. You can switch between these two tabs.

On the **Process Context** tab, next to each variable you can see three icons. Depending on the selected icon, the task form will display only specific variable parameter.

The form can show the following variable parameters (move the icons to the form to display specific parameters in the form):

- **property name** – display only the context variable name, without the variable value;

- **property value** – display only the context variable values, without the variable name;

- **property description** – display only the context variable description.

You can use drag and drop to easily move elements from the left and top panels to the task form.

Create a new form for the **Fill in Leave Request Form** task of the **Leave Request** process (Fig. 152 - Fig. 154). To edit the form drag and drop items from the panels (Fig. 155).

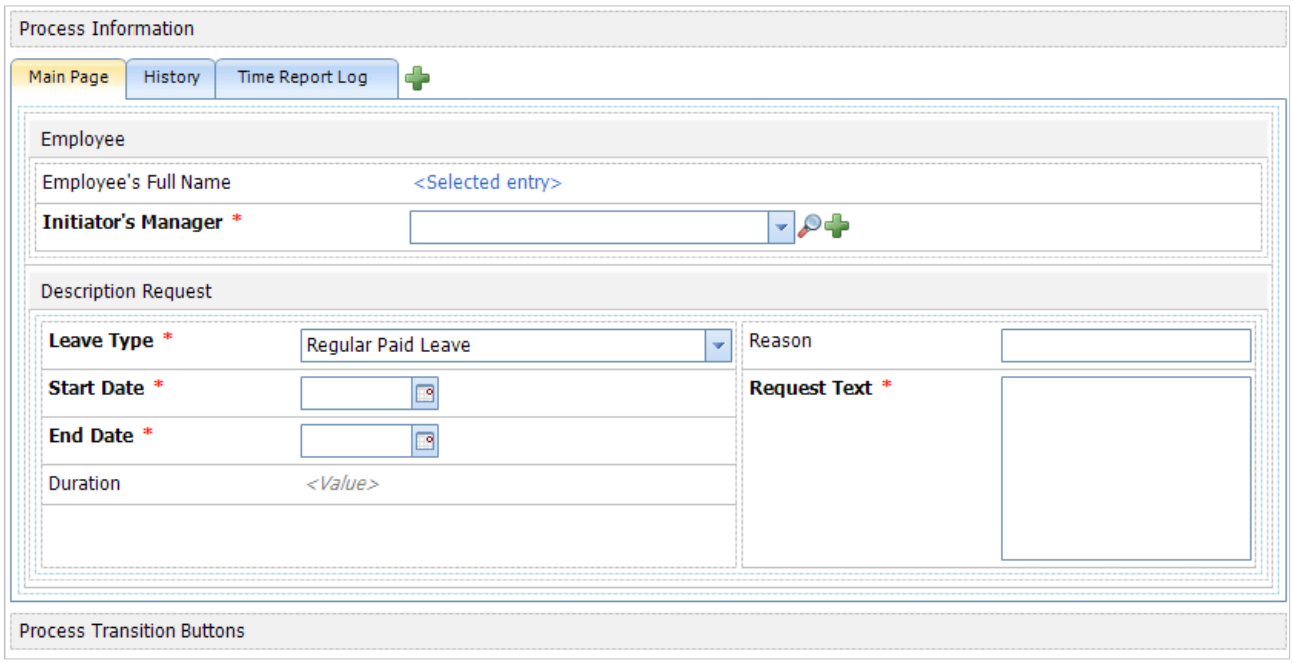


Fig. 155. Creating a task form in Form Builder

After you have saved and published the process, the task form in **ELMA Web Application** will change and will look as follows (Fig. 156):

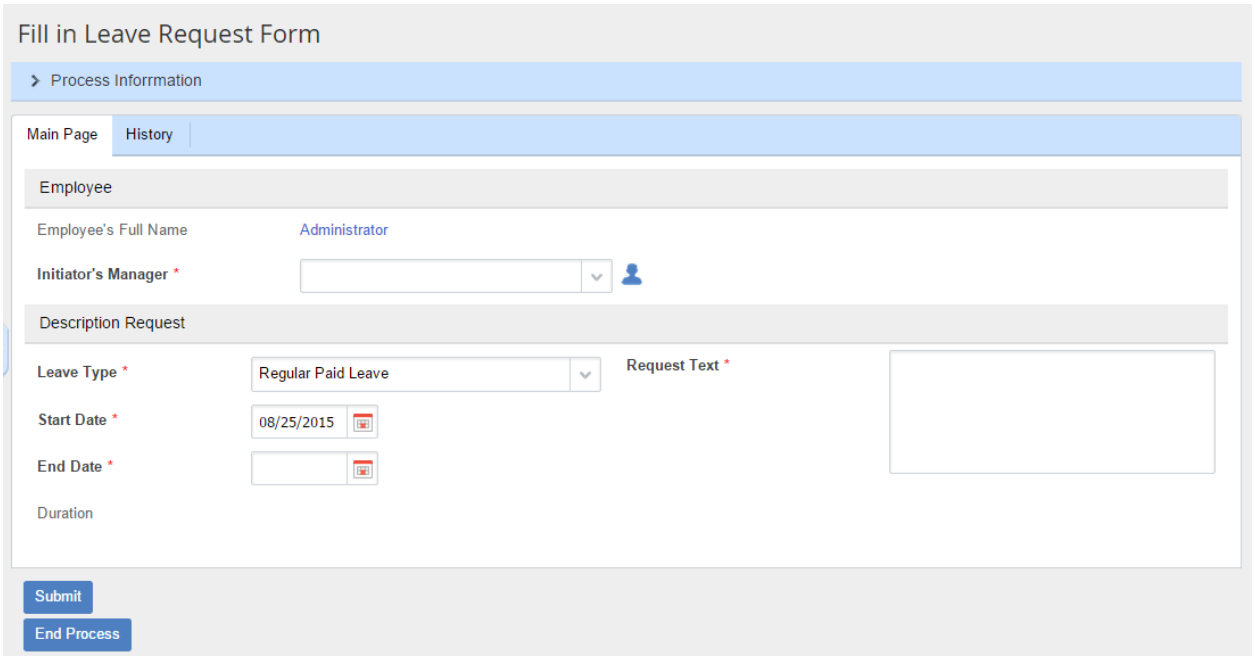


Fig. 156. A task form in ELMA Web Application

5.7.6.2 Basic form settings

To configure the task form created in **Form Builder** click the **Form Settings** button in the form toolbar (Fig. 157).

Fig. 157. The Form Settings button

The Form settings window opens. In this window, you can:

- edit the form name (Fig. 158);
- select **View-only** option (no editable fields) (Fig. 158);
- specify the script on loading the form (the **Advanced** tab) (Fig. 151).

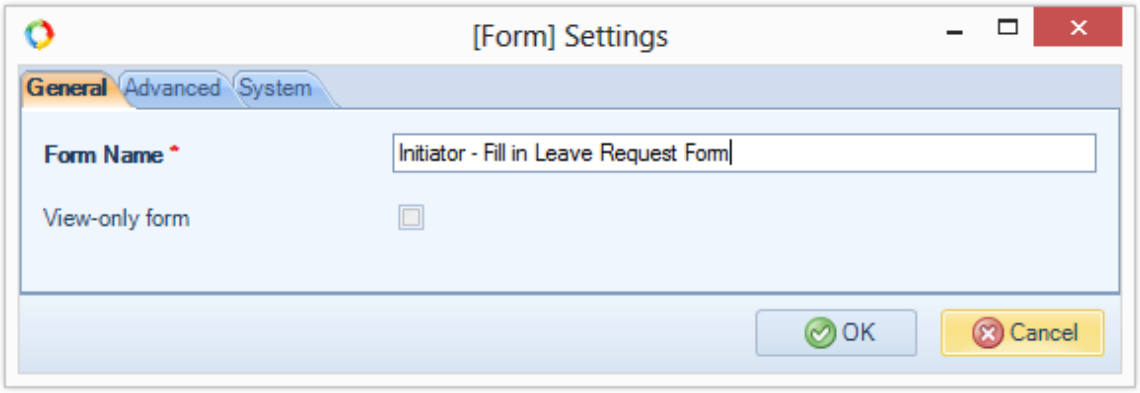


Fig. 158. The Form Settings window → the General tab

You can also configure displayed variables and form elements. To do this, double click on the context variable displayed in the form or select the variable and click (the **Display Settings of Selected Element** button). The Context variable settings window will open. The same window opens when you work with the standard form.

When you configure a form element (column, panel, tab), the settings window of this element opens. When you configure a Column, you can edit only the **Element Name**, it does not affect form display.

Panel Settings

In the Panel settings window, on the **General** tab (Fig. 159) you can edit the panel name and the panel style (color, design), make the panel collapsible and select the default options: collapsed or expanded. A collapsible panel in the task form allows to hide reference information and to make task interface more user-friendly.

On the **Advanced** tab (Fig. 160) you can configure how the data will be loaded: simultaneously with the form or later. If the panel contains large amount of information, use this option to accelerate task form loading.

You do not need the **System** tab when using **Form Builder**.

Tab Settings

You configure the **Tab** in a similar way. In the **Tab** settings window, on the **General** tab you can enter the **Tab** name; on the **Advanced** tab select the content display options.

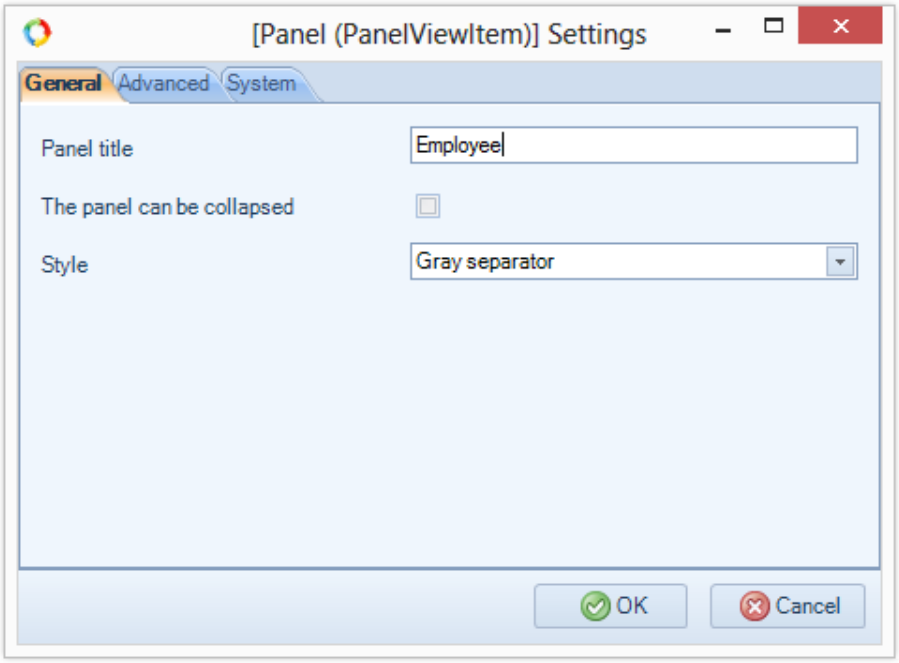


Fig. 159. Panel Settings → the General tab

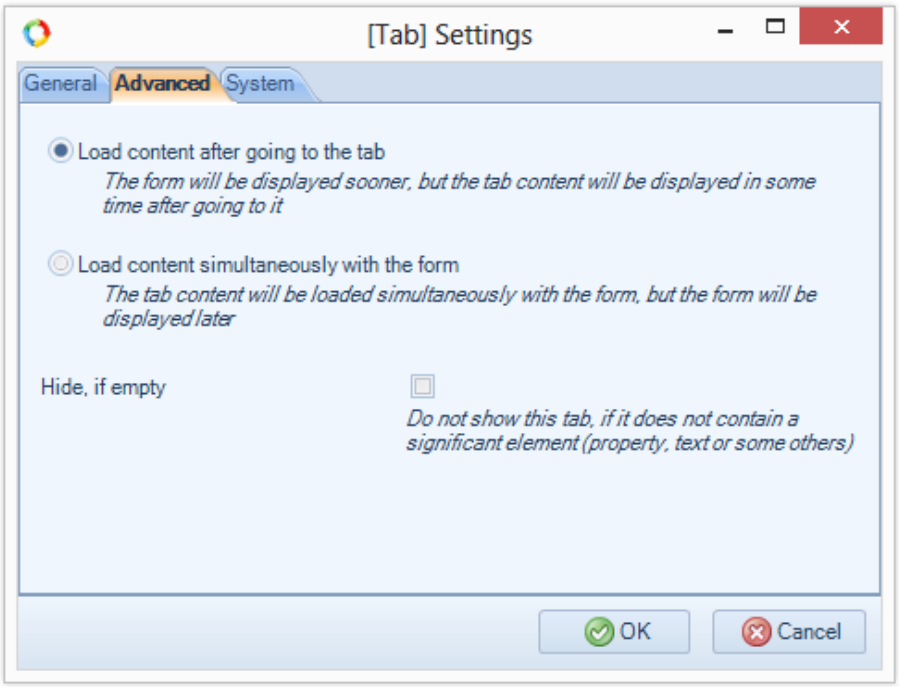


Fig. 160. Tab Settings → the Advanced tab

5.7.7. Metrics and KPIs

Metrics and KPIs provide a measurement tool that helps to make the process both easy and effective.

When modelling a business process, you can specify the metrics/KPI checkpoints and determine their plan values. Then, while **ELMA** is executing this process instance, you will be able to monitor the quality of its execution. If the instance metrics do not meet the plan values (slow execution, unacceptable KPI values, etc.), you will see the instance name highlighted red in **ELMA Web Application**.

To create **Metrics and KPIs** open **ELMA Designer** → the process page → **Metrics and KPIs** tab. You can check **Metrics and KPIs** values **in ELMA Web Application**, on the page of the process or the process instance.

Metric is a value of a certain process parameter that does not affect the process status. In **ELMA Designer**, on the **Metrics and KPIs tab**, in the element list the **Metric** is displayed as an icon . In **ELMA Web Application**, you will see metrics displayed as numeric values. Unlike the KPI, the metric does not have a plan value or a scale. You cannot specify its status or use it to set the status indicator of a process instance.

KPI is a value of a certain process parameter that affects the process status. In **ELMA Designer**, on the **Metrics and KPIs tab,** in the element list the **KPI** is displayed as an icon . The KPI can have plan, minimum and maximum values and a display scale. In **ELMA Web Application**, next to the KPI you can see its status indicator: red, yellow or green. You can set the status indicator of the process instance based on the KPI statuses.

In **ELMA**, you can calculate the KPIs of a process instance and the KPIs of the process. The process KPIs are based on the instances KPIs, i.e. they are aggregations of values across many instances, where the aggregation function can be average, maximum, minimum or sum. You can write your own C# script to calculate the KPIs.

The following is a KPI example for measuring **Leave Request** process. Create a process **instance** KPI and a **process** KPI that will track the time the initiator's manager spent on the leave request approval. Suppose that the optimum approval time is two working days.

This book describes only one KPI type; however, there are other metrics and KPI types that allow you to measure how well a process is performed. Find more information about KPIs in **ELMA Help**.

5.7.7.1 Creating Instance KPI

To create a process instance KPI or metric you can use one of the following methods (Fig. 161):

- In **ELMA Designer** → **Processes**→ select **Process** → open **Metrics and KPIs tab** → on the top toolbar click **Instance KPI** button;
- In **ELMA Designer** → **Processes**→ select **Process** → open **Metrics and KPIs tab** → click on the blank field, the context menu will open → select **Add Process Instance KPI**.

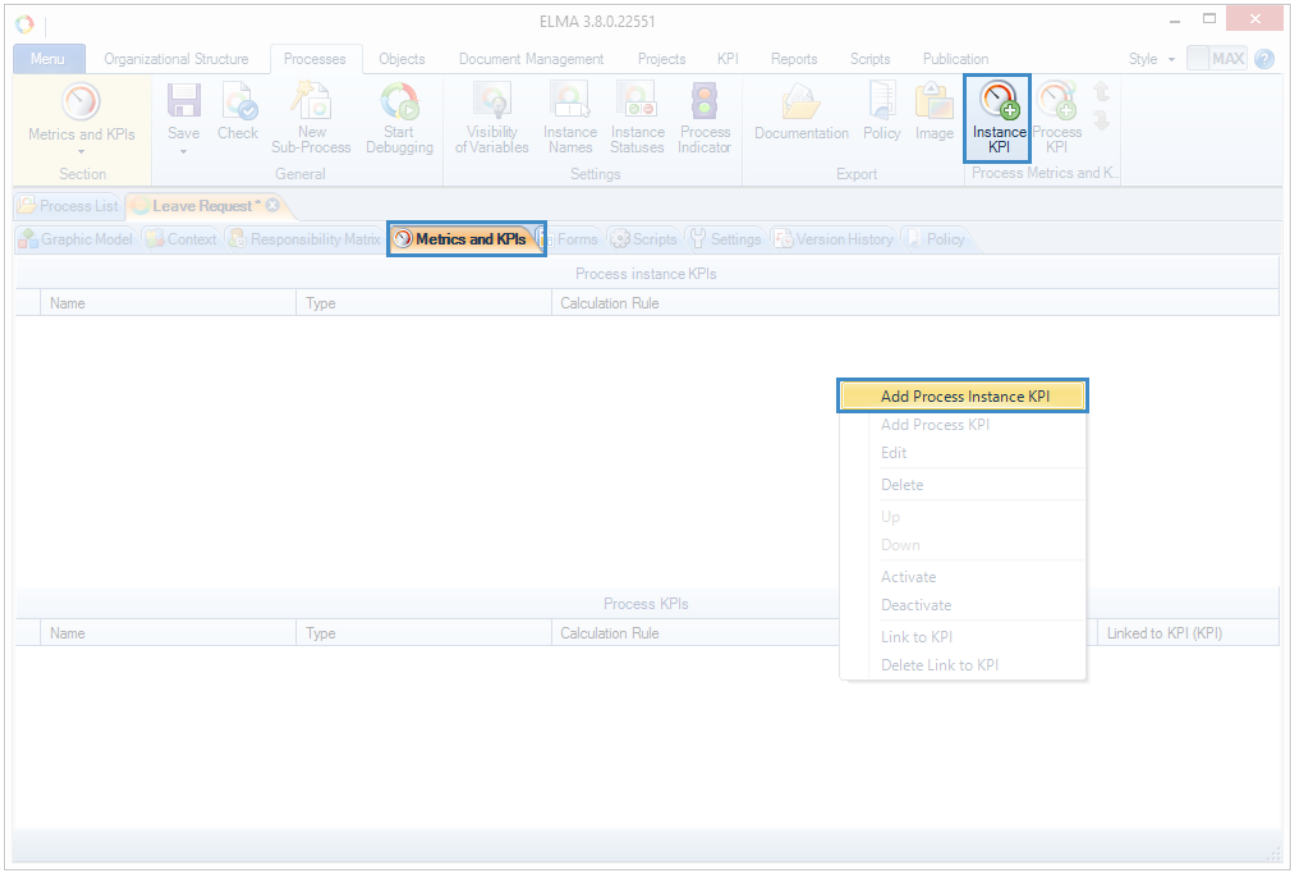


Fig. 161. The buttons to create a process instance metric/KPI

The creation wizard window will open. You can navigate between the windows of the wizard with the **Back** and **Next** buttons. To cancel KPI creation at any step of the wizard click the **Cancel** button.

Step 1. KPI name

Enter a meaningful KPI name. You can also enter a description and select a type (metric or KPI). The system will automatically assign the property name depending on the KPI name (Fig. 162).

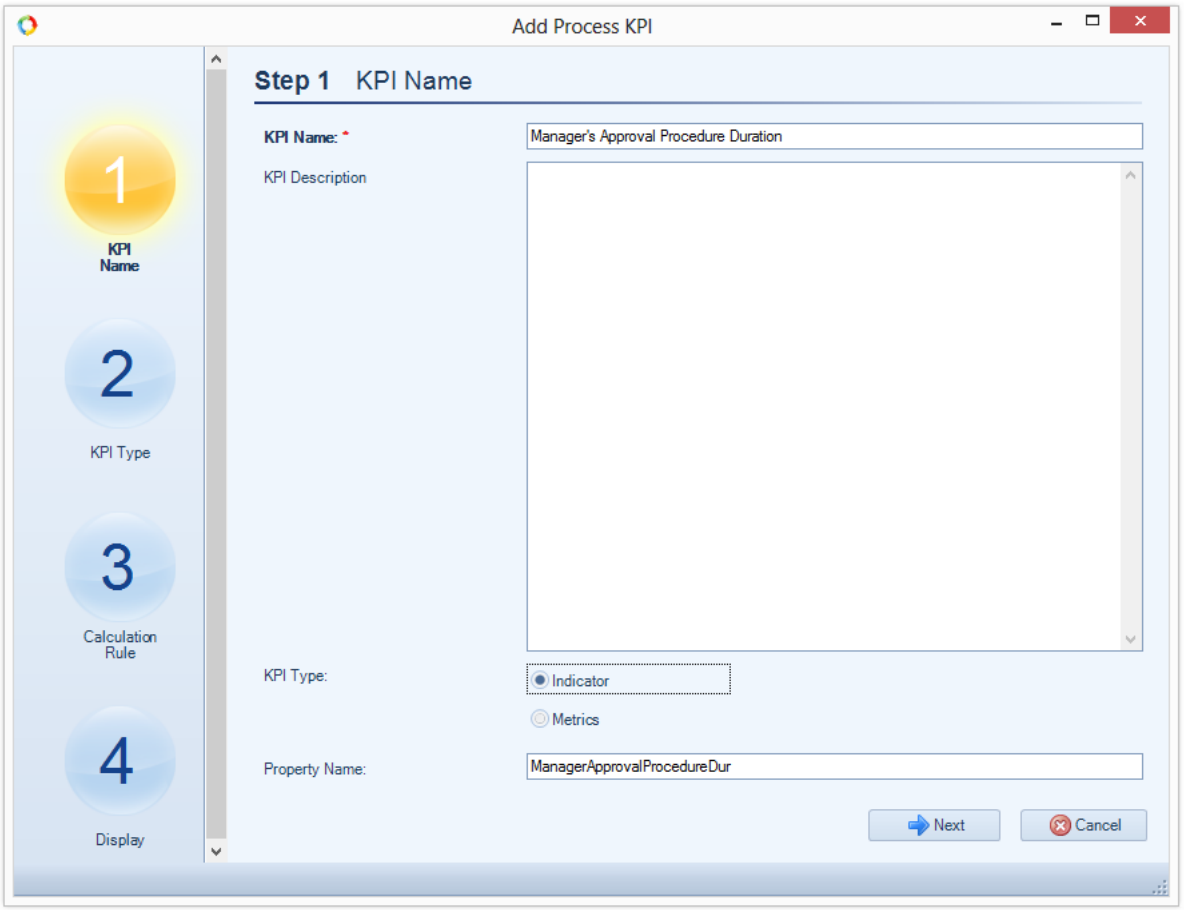


Fig. 162. KPI/metric wizard: Step 1. KPI name

Step 2. KPI Type

Specify the **KPI Type** (Fig. 163):

- **Technical** – a KPI defined by the script in the process. It can store the following data types: **Integer**, **Fraction**, **Time Interval**;
- **Time** – a KPI defined by the rule you will specify in the next step. It can store **Time Span**. In this step, specify whether the system must use the business calendar when calculating KPI or not.

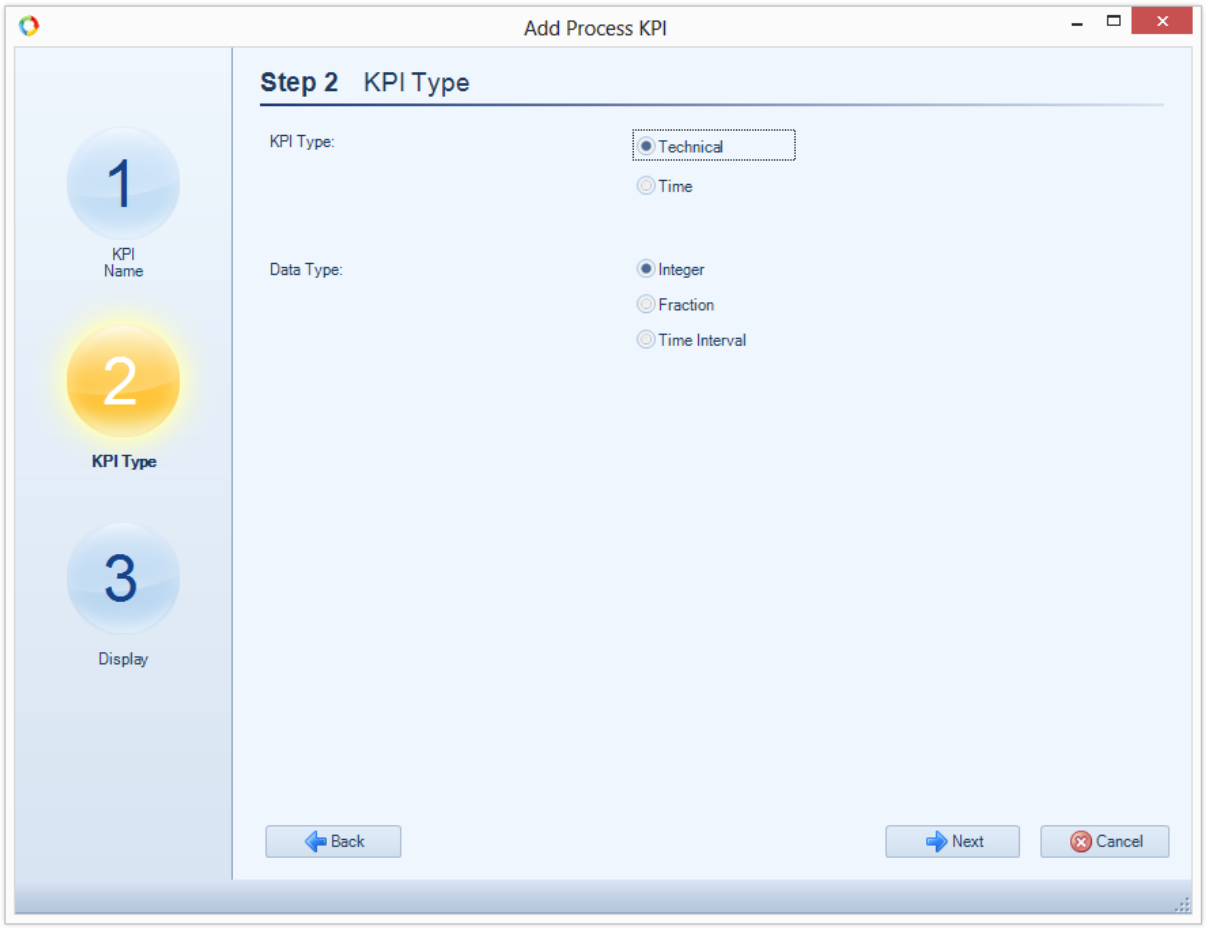


Fig. 163. KPI/metric wizard: Step 2. KPI type (Technical)

For the **Approval Time KPI** select **Time** type and **Use Business Calendar** option (Fig. 164).

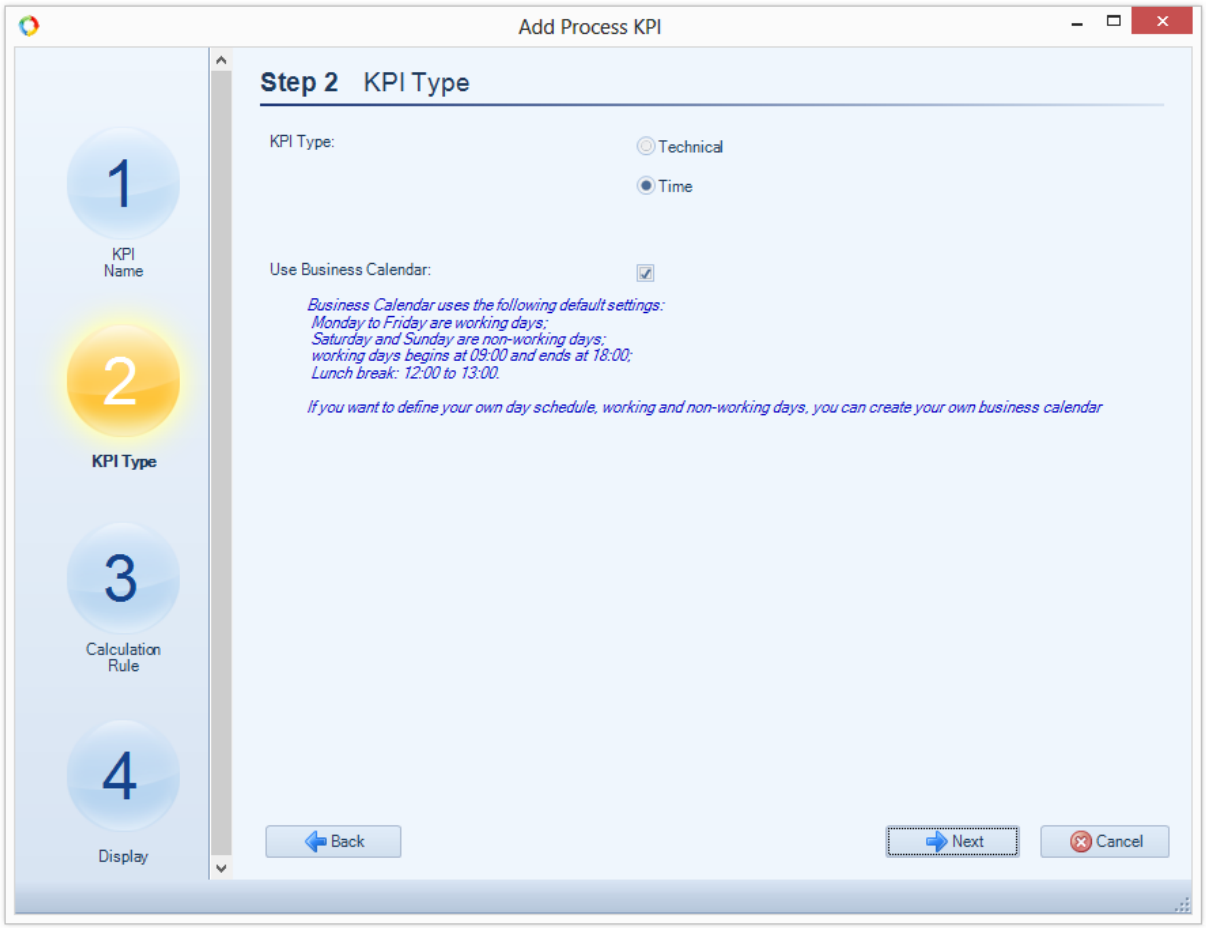


Fig. 164. KPI/metric wizard: Step 2. KPI type (Time)

Step 3. Calculation Rule (Fig. 165)

Specify the KPI calculation rule (only for the Time type KPI).

The process instance KPI can store the following time intervals:

- Business process execution time;
- Stage execution time;
- Task execution time.

The **Approval Time KPI** must calculate how long it takes to complete the **Approve Leave** task.

Configure the KPI as follows (Fig. 165):

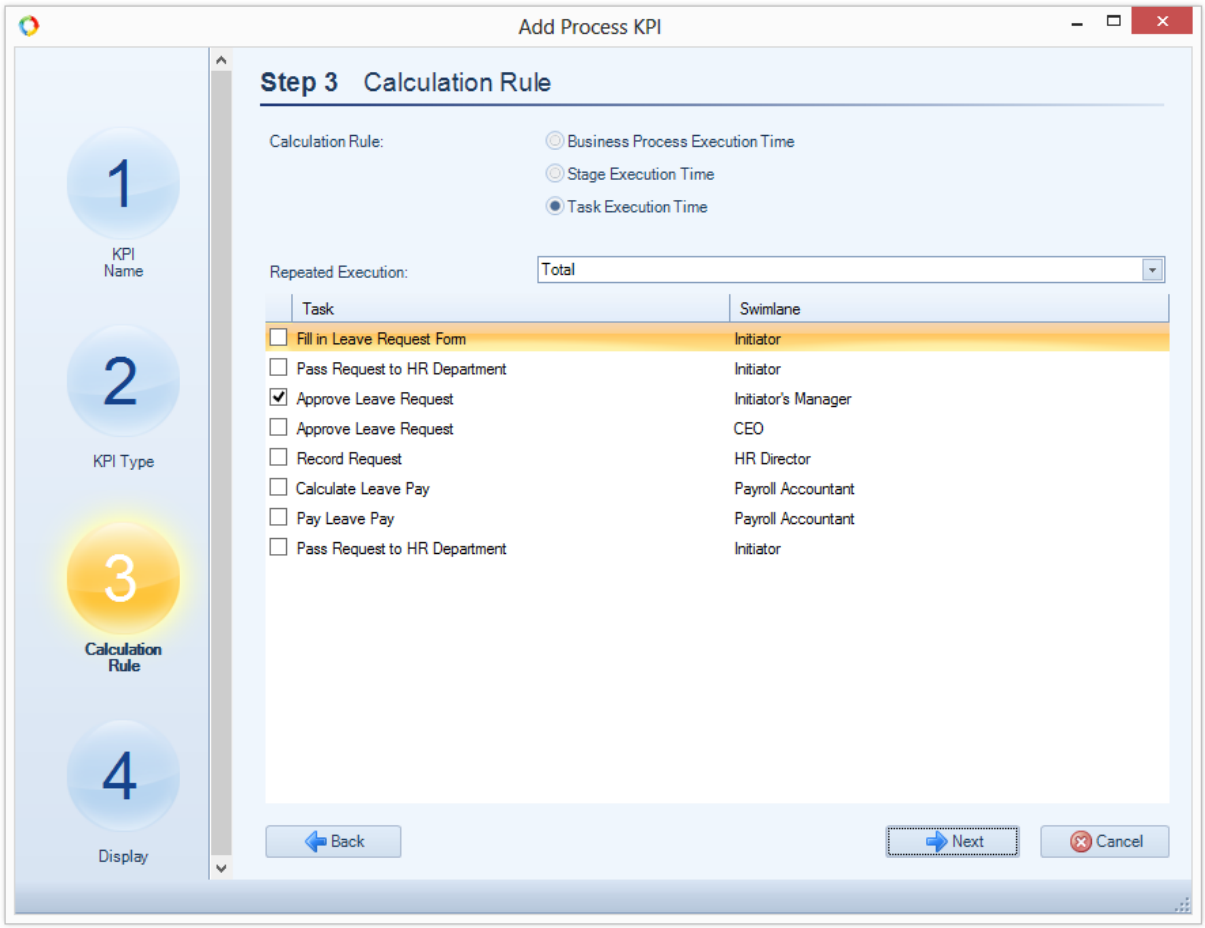


Fig. 165. KPI/ metric wizard: Step 3. Calculation Rule

Step 4. Display

Configure the KPI plan value and display option. Available only for KPIs.

Enter a plan value (in minutes) for the **Approval time** KPI: 960 (two 8-hour working days). Select the **Decrease** scale.

Fill in the values of the **Decreas** scale (Fig. 166):

- Minimum - 0;
- Maximum - 48,000 (100 working days);
- Maximum critical value - 2,400 (5 working days).

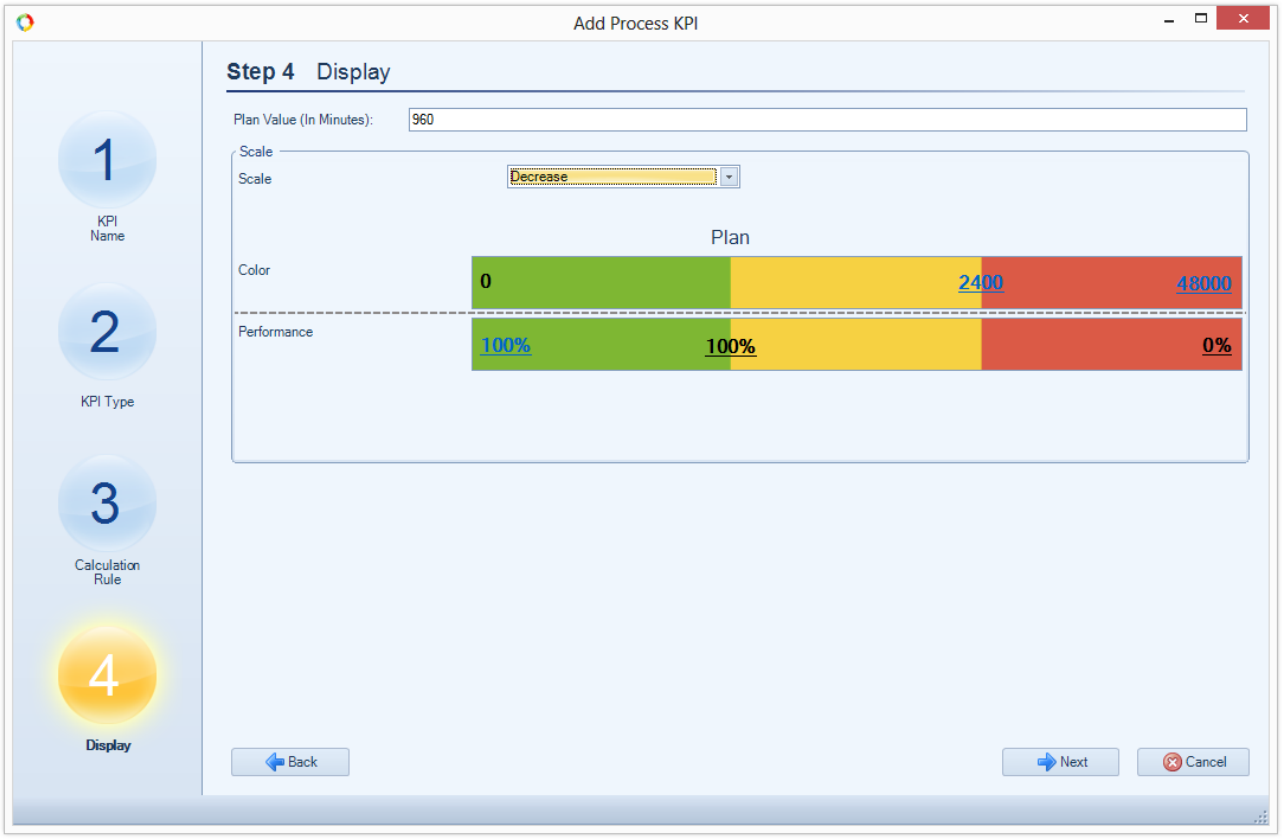


Fig. 166. KPI/metric wizard: Step 4. Display

If the task execution time is less than the minimum or greater than the maximum value, **ELMA** will not consider this value when calculating KPI. Therefore, specify 0 as the minimum and 48,000 as a maximum value.

In **ELMA Web Application**, next to the KPI value and the process name you will see red, yellow or green KPI indicator, depending on the time the manager spent on the **Approve Leave Request** task.

After you have completed all the above steps, the system creates the process instance KPI. Save and publish the process. **ELMA** will calculate this KPI for all the new process instances and will display the KPI indicator on the process instance page (Fig. 167).

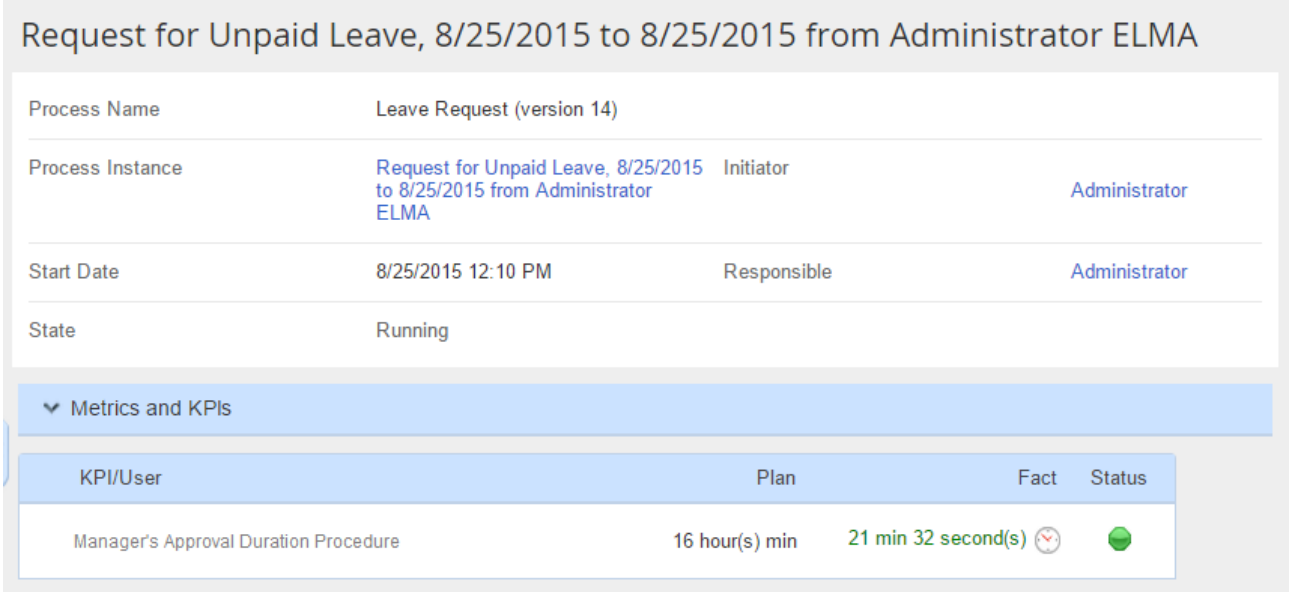


Fig. 167. KPI indicator display

5.7.7.2 Creating Process KPI

You can create KPIs and metrics not only for the process **instances** but also for the **process**. You can use the process KPIs and metrics to aggregate the process instance KPIs. You create the process metrics and KPIs in a similar way as the instances metrics and KPIs.

Create process KPIs and metrics in the Creation Wizard. To start the Creation Wizard, open **ELMA Designer** → **Processes**→ select **Process** → open **Metrics and KPIs tab** → on the top toolbar click **Process KPI** button. Or in **ELMA Designer** → **Processes**→ select **Process** → open **Metrics and KPIs tab** → right-click on the blank field, the context menu will open → select **Add Process KPI** (Fig. 168). The Creation Wizard window will open.

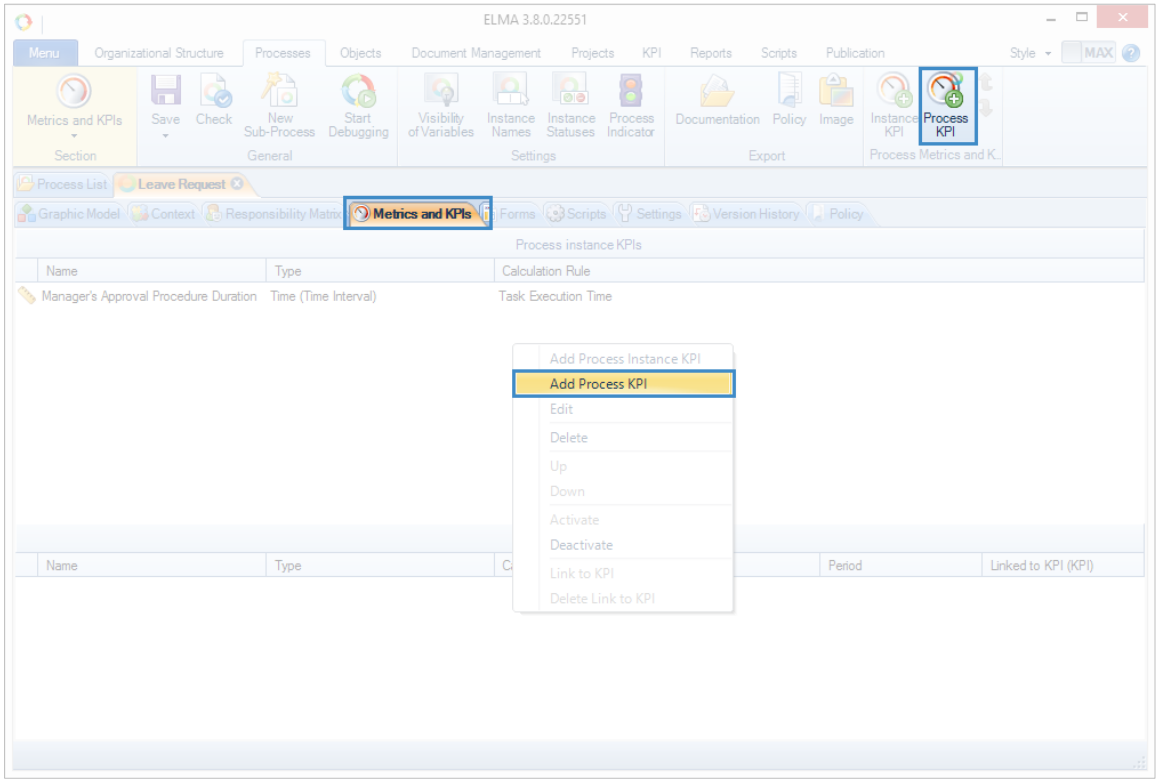


Fig. 168. The buttons to create a process metric/KPI

Step 1. KPI name

Enter a meaningful KPI name. You can also enter a description and select a type (metric or KPI), specify the frequency, specify whether the KPI is personal. The system will automatically assign the property name depending on the KPI name (Fig. 169).

For the **Leave Request** process, create an **Approval Time KPI**. See the KPI in the Fig. 169.

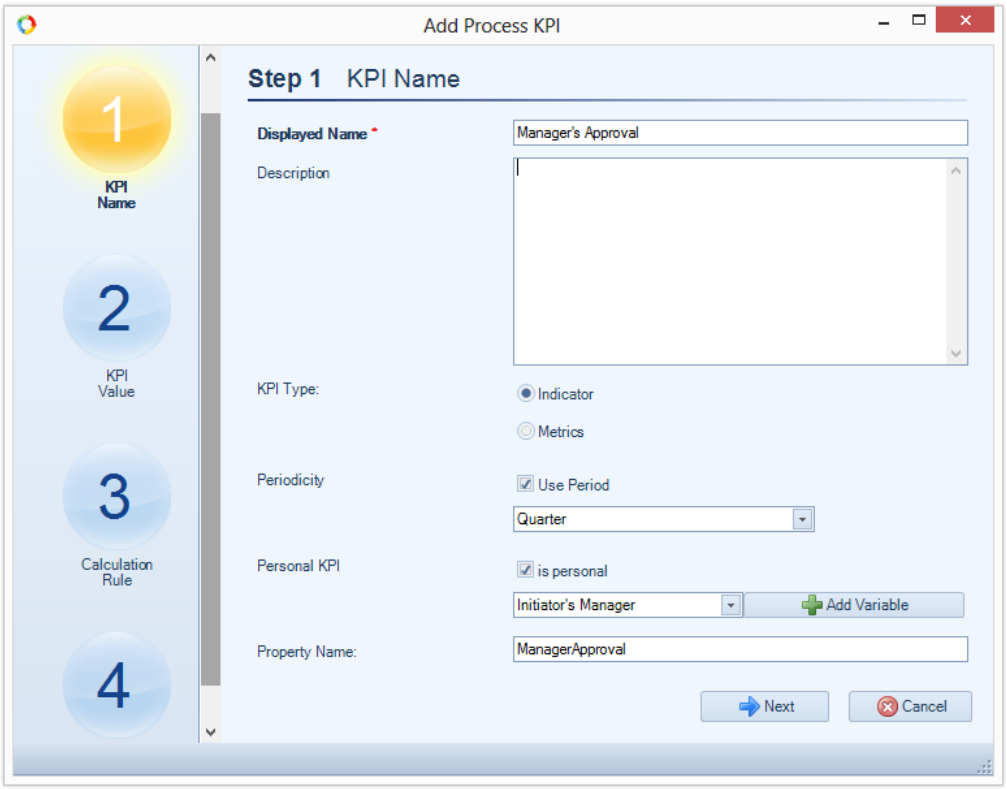


Fig. 169. KPI/ metric wizard: Step 1. KPI name

Step 2. KPI Value

Specify **KPI Value** and **Data Type** if you select **Technical.**

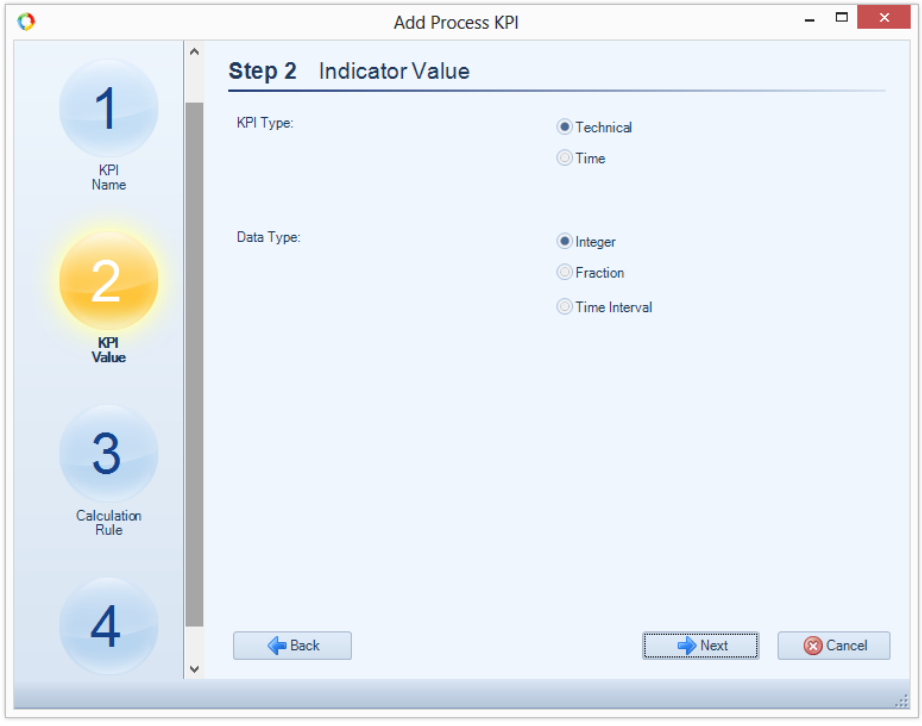


Fig. 170. KPI/ metric wizard: Step 2. KPI value

For the **Approval Time KPI** of the **Leave Request** process select **Time** type.

Step 3. Calculation Rule

Select KPI calculation method and specify the KPI calculation rule. Configure the **Approval Time KPI** of the **Leave Request** as follows (Fig. 171):

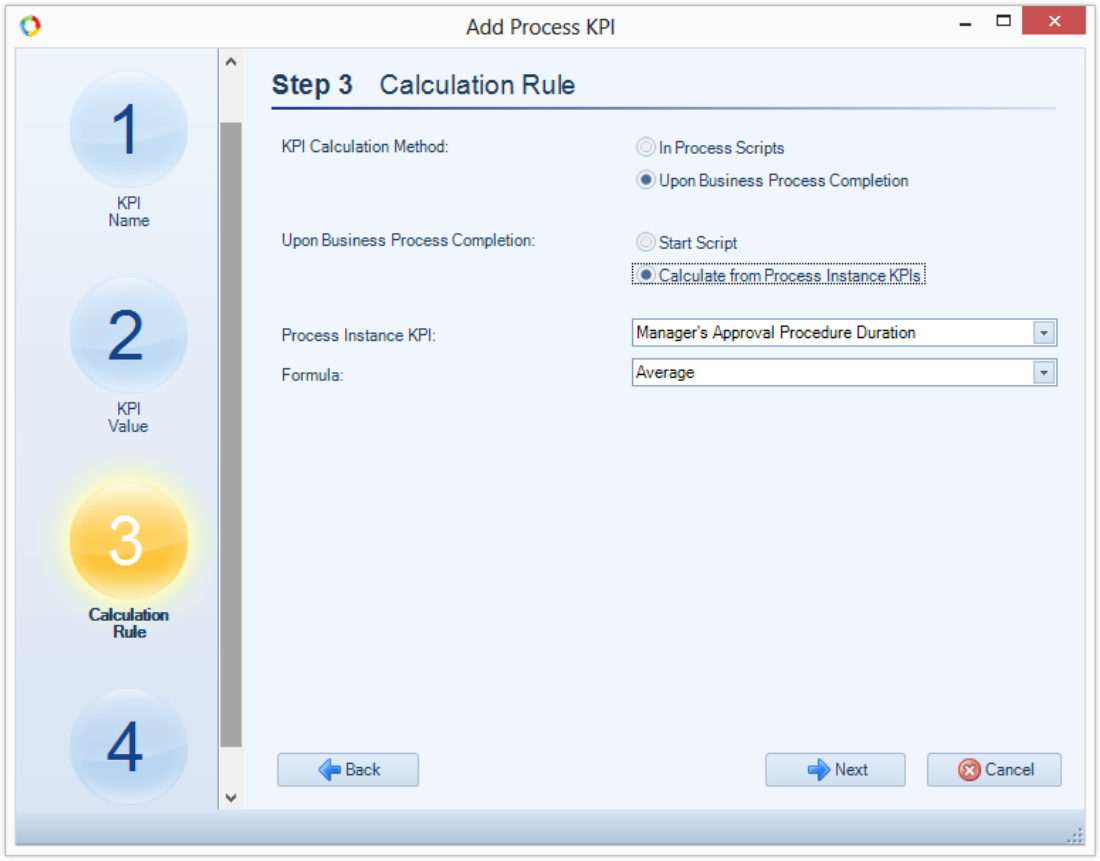


Fig. 171. KPI/metric wizard: Step 3. Calculation Rule

Step 4. Display

Specify the KPI plan value and adjust the scale. For the **Approval Time KPI** of the **Leave Request** process specify the same display settings as for the **process instance KPI** (see 5.7.7.1 and Fig. 172).

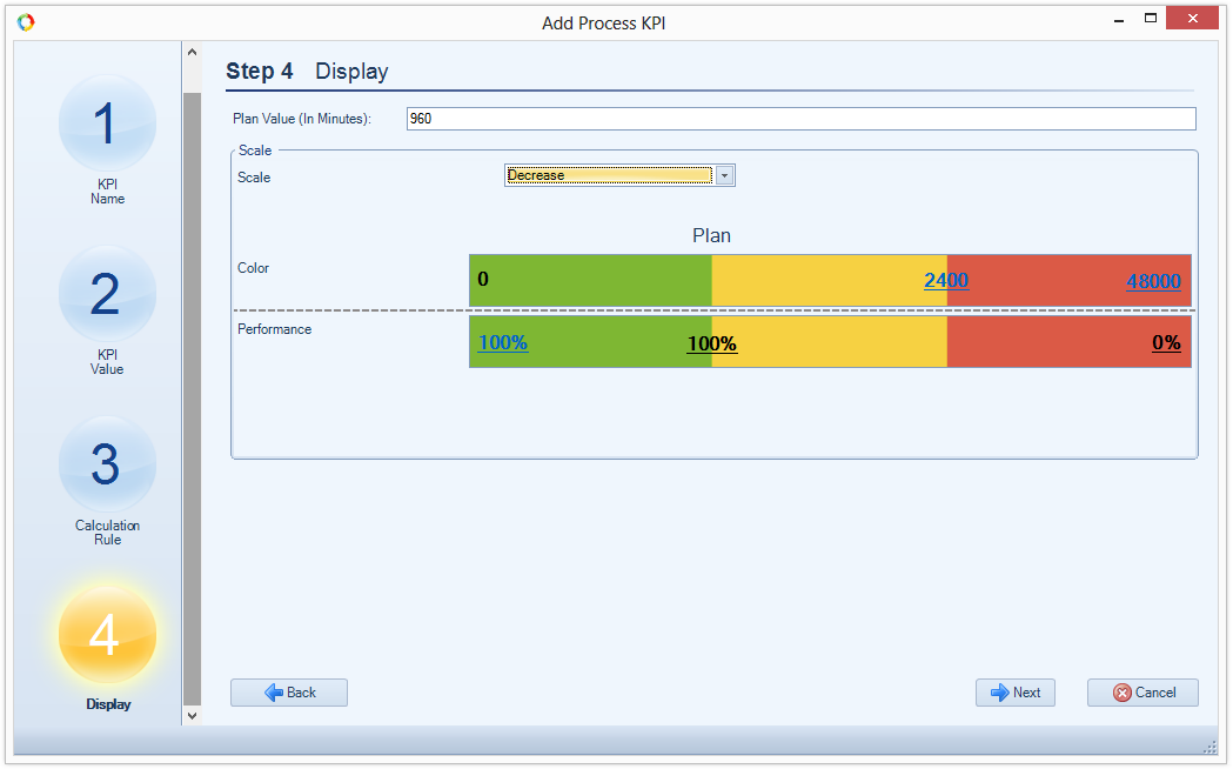


Fig. 172. KPI/metric wizard: Step 4. Display

Click **Finish** to complete creation of the process KPI.

Now, the **Metrics and KPI** tab of the **Leave Request** process will display the list of all the configured metrics and KPIs (Fig. 173). You can create, edit, delete, disable or enable KPIs and metrics of the process and the process instance. Save and publish the process to apply the changes.

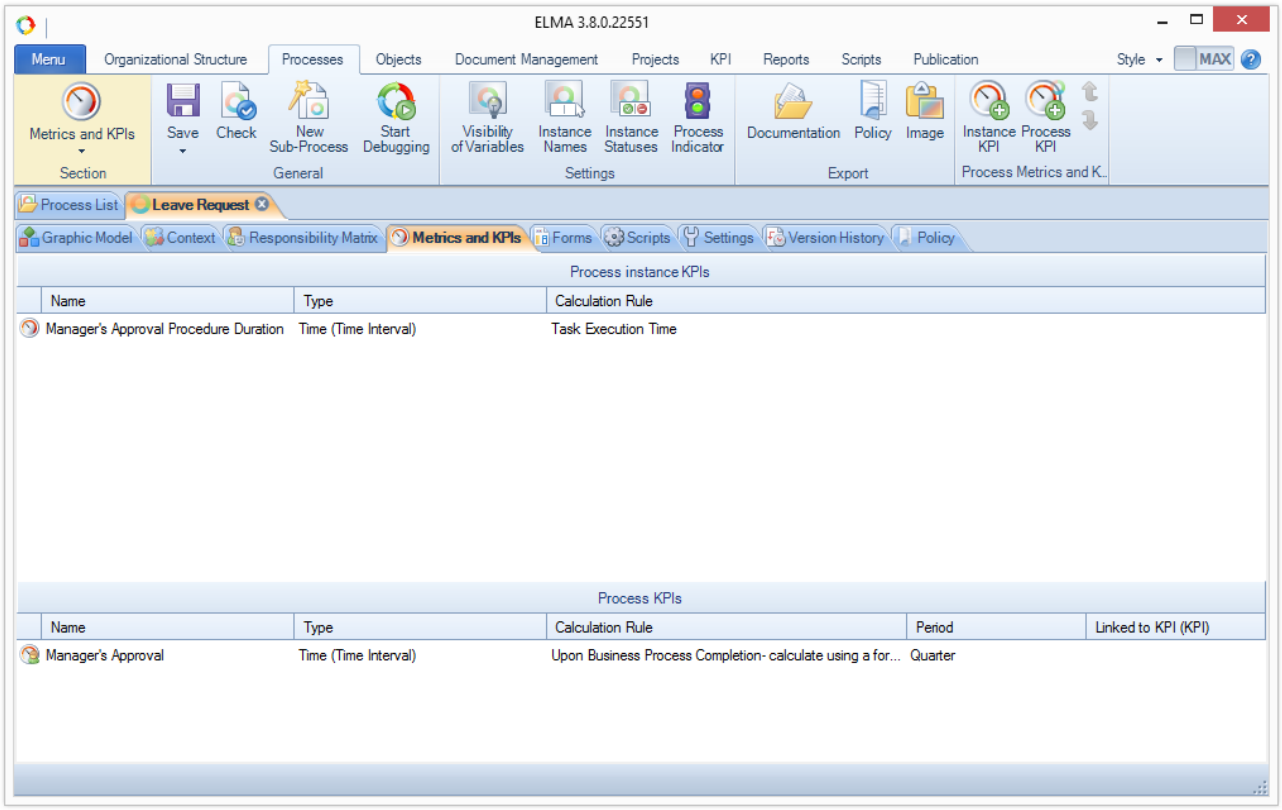


Fig. 173. The Metrics and KPIs tab of the process page

ELMA will display the created KPI on the process page, in the **Process Monitor** section (Fig. 174).

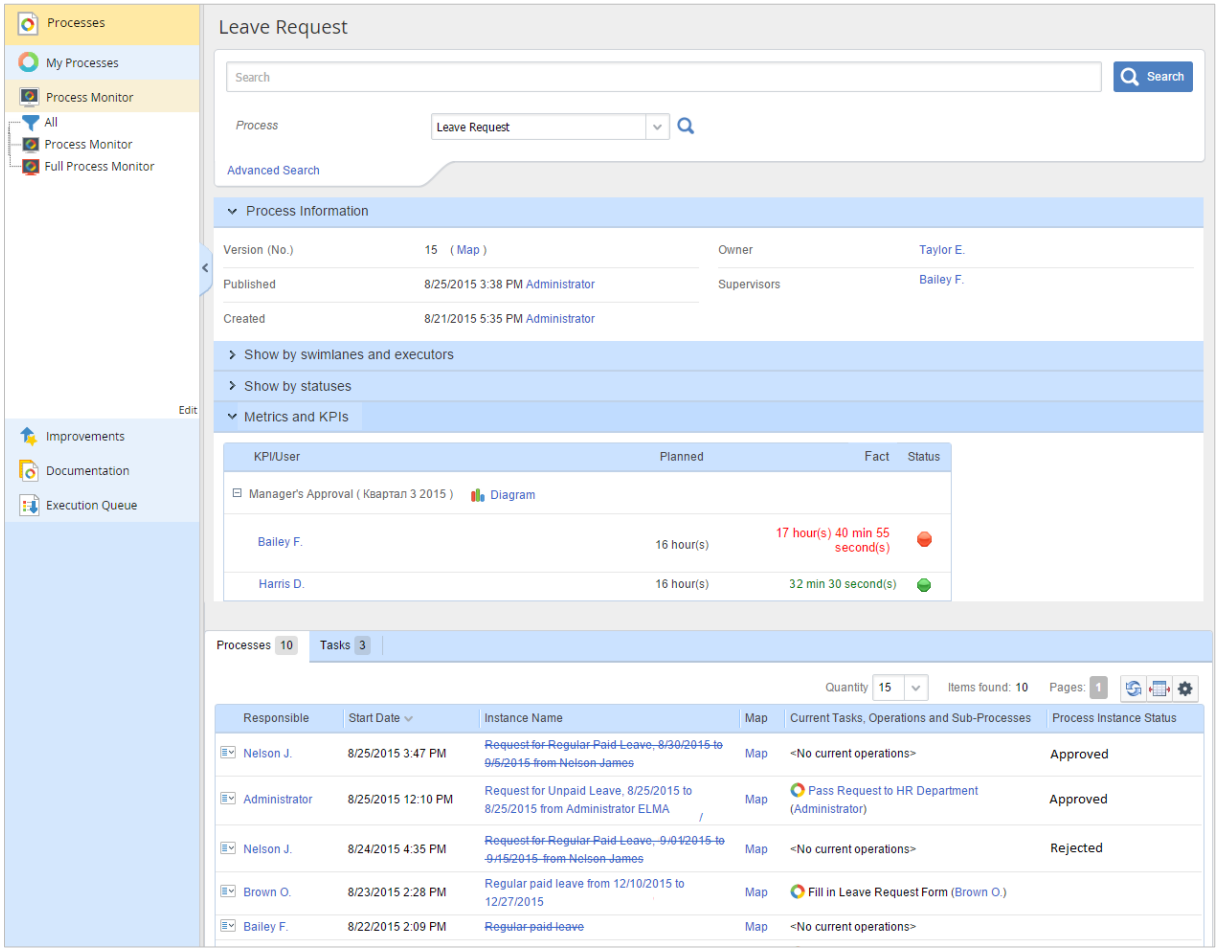


Fig. 174. The process KPI in the Process Monitor section

The **Approval Time KPI** is a personal KPI for the users represented by **Initiator's Manager** swimlane. Now you will be able to estimate the average time each manager spent on approval and will see whether the manager considered the requests in time.

5.7.7.3 Process Indicator

When creating an instance KPI, in the Step 4 **Display** (Fig. 166) you define the range of the instance KPI. Each KPI range is marked with a different color: green, yellow or red depending on the KPI value: normal (expected), allowable and critical (unacceptable).

You can configure a process indicator to receive up-to-date information about business process execution and check if there are deviations from the expected values. To be able to track process performance online, you need to specify the most important process instance KPIs. The indicator of the selected KPI will be displayed in **ELMA Web Application** → in the **Process Monitor** section. The color of the indicator will depend on the KPI's range.

In **Web Application**, the process indicator is shown as a green, yellow or red circle next to the process instance name. Its color depends on the instance KPI value. You can check the color of indicators in the **My Processes** and **Process Monitor** portlets and in **My Processes** and **Process Monitor** sections. You can quickly take suitable corrective or preventive actions to improve the process performance, if you see that the indicator is not green.

To enable the process indicators, in the top toolbar of the process page click **Process indicator** button, in the emerged window, select **Enable** option (Fig. 175).

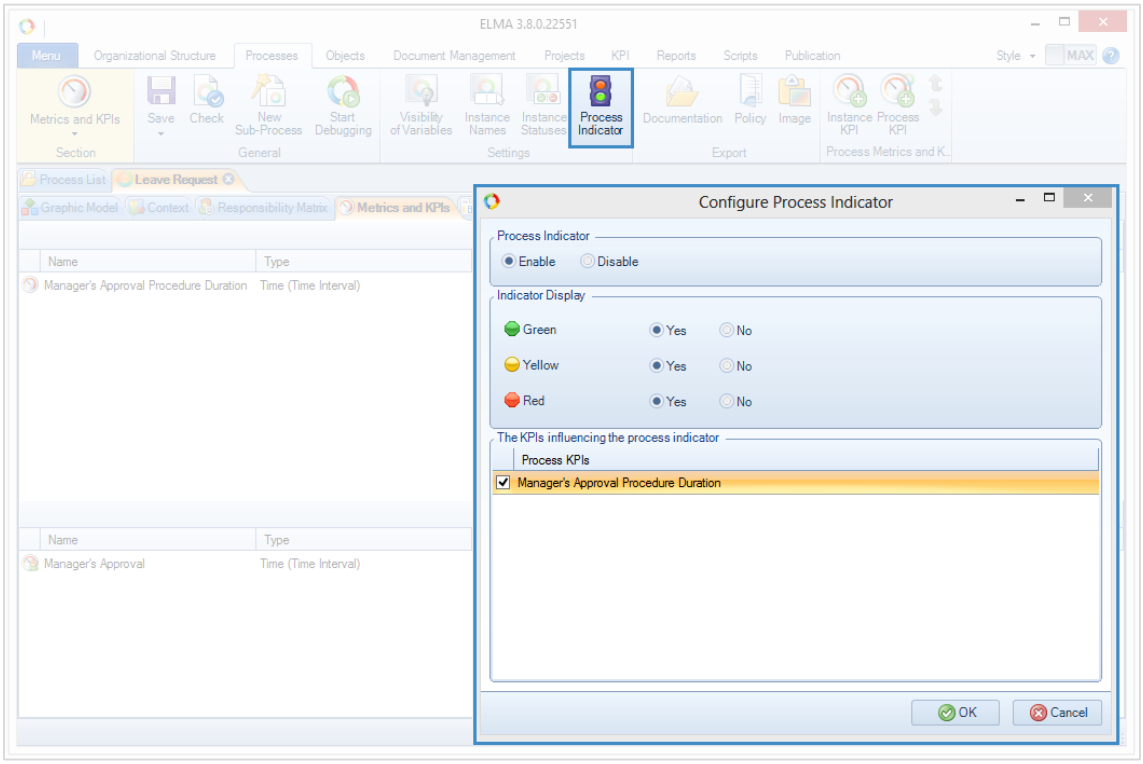


Fig. 175. Configuring a process instance indicator

Process indicators in **ELMA** can be of three colors:

- **Green (Good)** – KPI values meet plan values
- **Yellow (Allowable)** - KPI values are in the acceptable range
- **Red (Critical)** - KPI values are in the unacceptable range

Switch between **Yes** or **No** to select indicators that will be displayed in the **Web Application**. If the KPI value falls within the range that you disabled, you will not see the indicator next to the instance name in **ELMA Web Application**.

In the bottom of the window, you will see the **KPIs that affect Process Indicator** panel. This panel displays only process instance KPIs. Select the KPIs that must be taken into account when calculating the aggregated process indicator. If you select several KPIs, the process indicator color will correspond to the worst KPI value.

Enable the indicator for the **Approval Time KPI**. Save and publish the process. Now in the **Process Monitor**, next to the process instance name you will see the indicator with the KPI status.

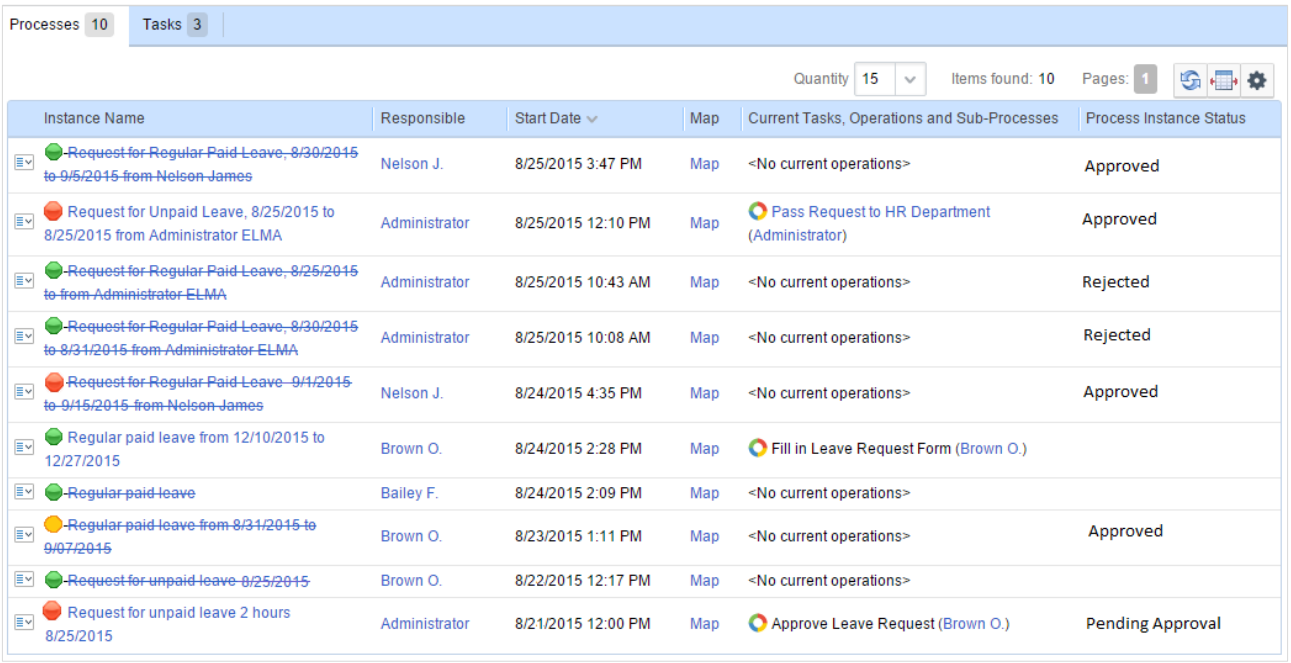


Fig. 176. Indicators of the process instance KPI in the web application

5.7.8. Sub-Processes

Sub-Process (Nested Business Process) is an independent business process initiated during the execution of the parent process. When you initiate the sub-process, **ELMA** will suspend the execution of the parent process until the sub-process is completed. The only exception are the external sub-processes with the **Multiple Execution** marker.

In BPMN notation, you can use the **Sub-Process** in two cases:

1. To design hierarchical process model and make diagrams more readable (business processes graphic models);
2. To perform repetitive actions. In this case, you can use any existing process as a sub-process.

In **ELMA,** there are two types of sub-processes: **External** and **Internal.** You can use them in both cases, mentioned in the previous paragraph.

5.7.8.1 Internal sub-process

Internal sub-process is a business process executed in the context of the parent process.

Internal sub-process belongs to the parent process and therefore it can use the data stored in the parent process. Though the **Internal sub-process** is executed within the parent process, it can have its own context variables that exist only within the sub-process.

Mostly an **Internal sub-process** is used to hide or reveal additional levels of a business process and to make its graphic model more readable. You can start an Internal sub-process only within its parent process.

Create a new Internal sub-process for the **Leave Request** process. In **ELMA Designer**, in the left toolbar of the **Graphic Model** tab, find **Internal sub-process** element. Place it in the process model. A window opens. In this window, you will see a list of available options: you can select one of the existing processes and use it as the sub-process or create a new Internal sub-process (Fig. 177). Select **Create New Internal sub-process** option and click **OK**.

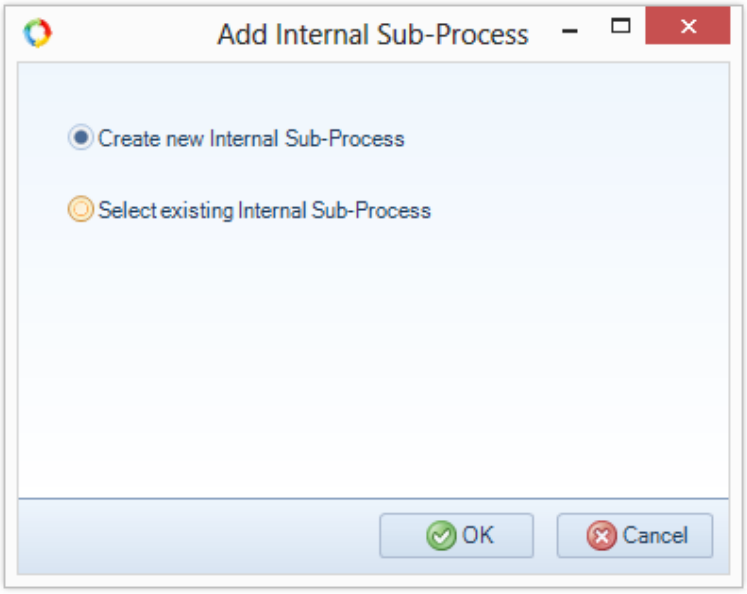


Fig. 177. Adding an Internal sub-process

Process Creation Wizard opens.

Step 1. Common Proprieties.

Enter the sub-process name: **Paper Form Control**. Click **OK** to continue.

Step 2. Swimlanes. Assign swimlanes later. Skip this step by clicking the **Next** button.

Now in **ELMA Designer**, in the **Process List** you will see a new sub-process under the **Leave Request** process (Fig. 178).

Fig. 178. An Internal sub-process in the process list

Replace the **Submit Request to HR Department** task with this sub-process. Now design the model of the **Paper Form Control** sub-process. You can place a sub-process in any swimlane of the parent process; the executors of the sub-process are defined within the sub-process.

Design a sub-process model as follows Fig. 179:

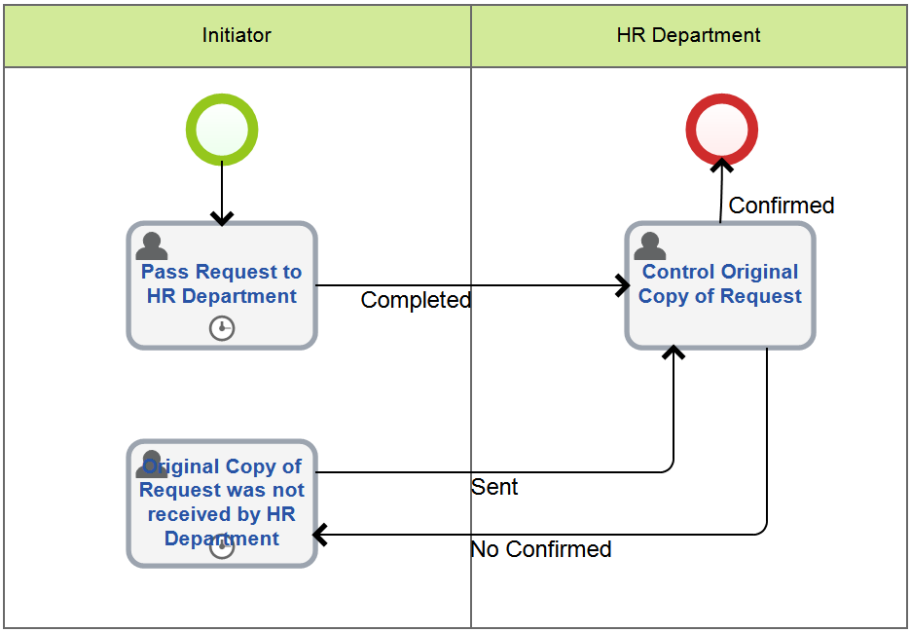


Fig. 179. The map of the Paper Form Control sub-process

In this Internal sub-process, in the initiator swimlane place the **Submit Request to HR Department** task; in the HR Department swimlane place the **Control Paper Form** task. Make both swimlanes dynamic. The Initiator is a user who starts the process. The HR Department swimlane represents any user specified in the list of job positions. For the HR Department swimlane also enable the **First Response** option (Fig. 180).

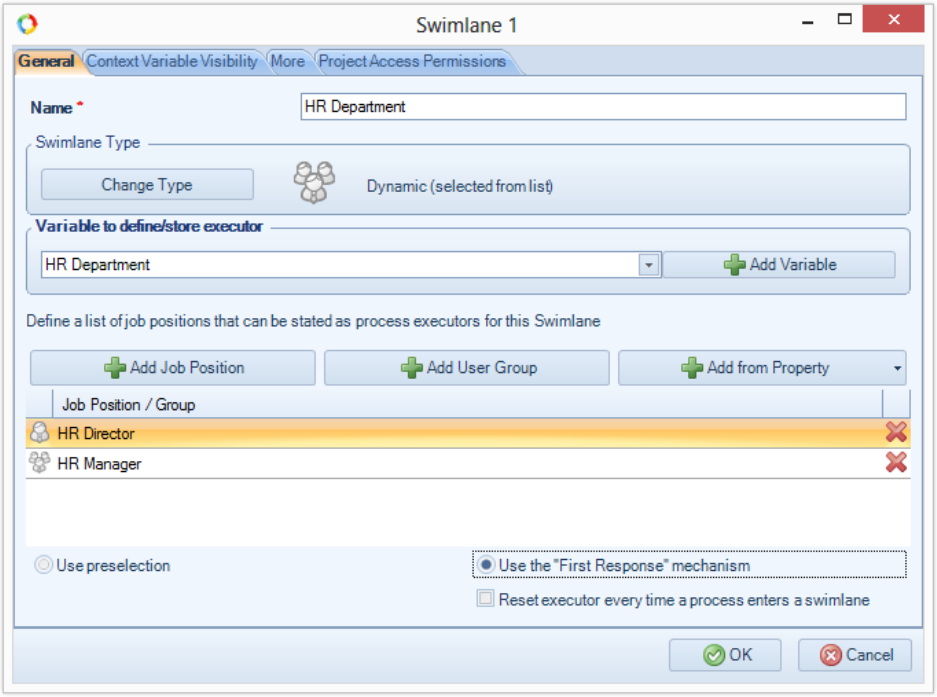


Fig. 180. Configuring the HR Department swimlane

According to the settings of this swimlane, any HR department employee can check whether the initiator has submitted a paper copy of the leave request.

The **Context tab** of the Internal sub-process already contains all the context variables of the parent process (highlighted blue). You cannot edit these context variables within the sub-process. However, you can create additional context variables (Fig. 181).

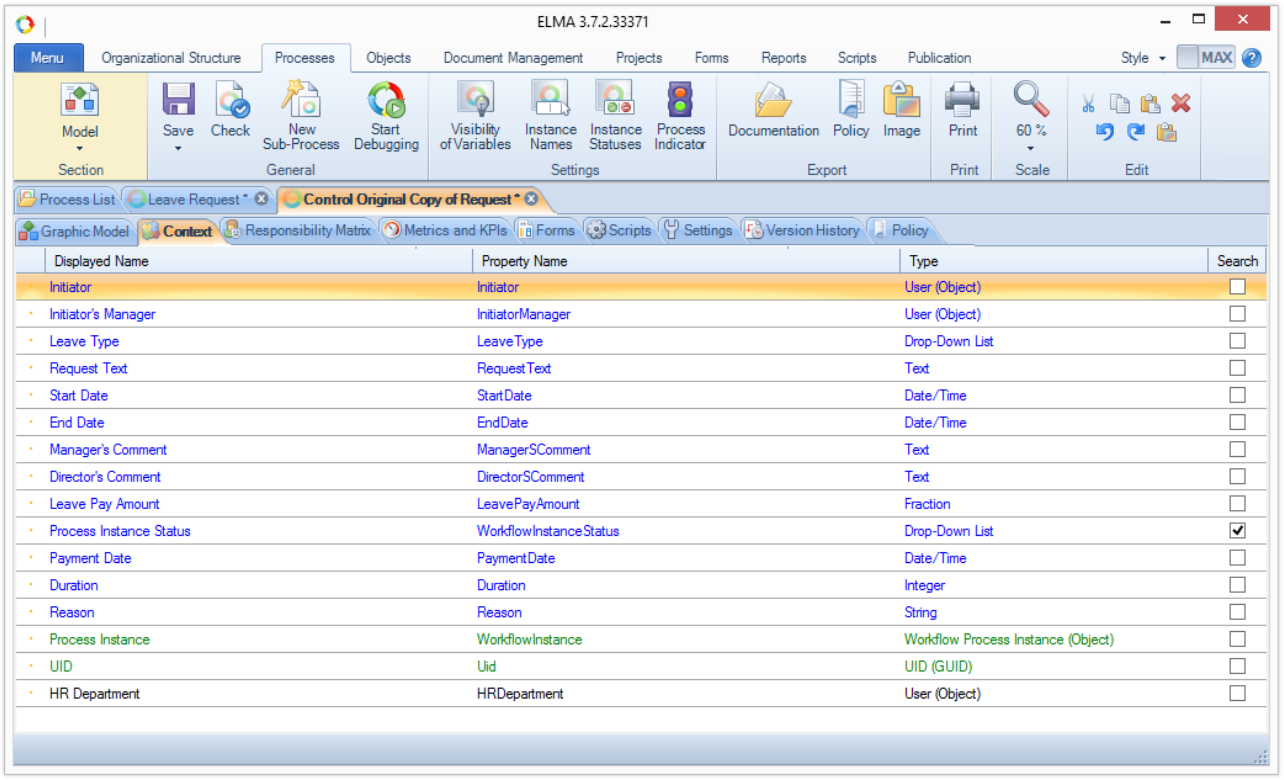


Fig. 181. Internal sub-process context

Now, the map of the **Leave Request** parent process looks as follows (Fig. 182):

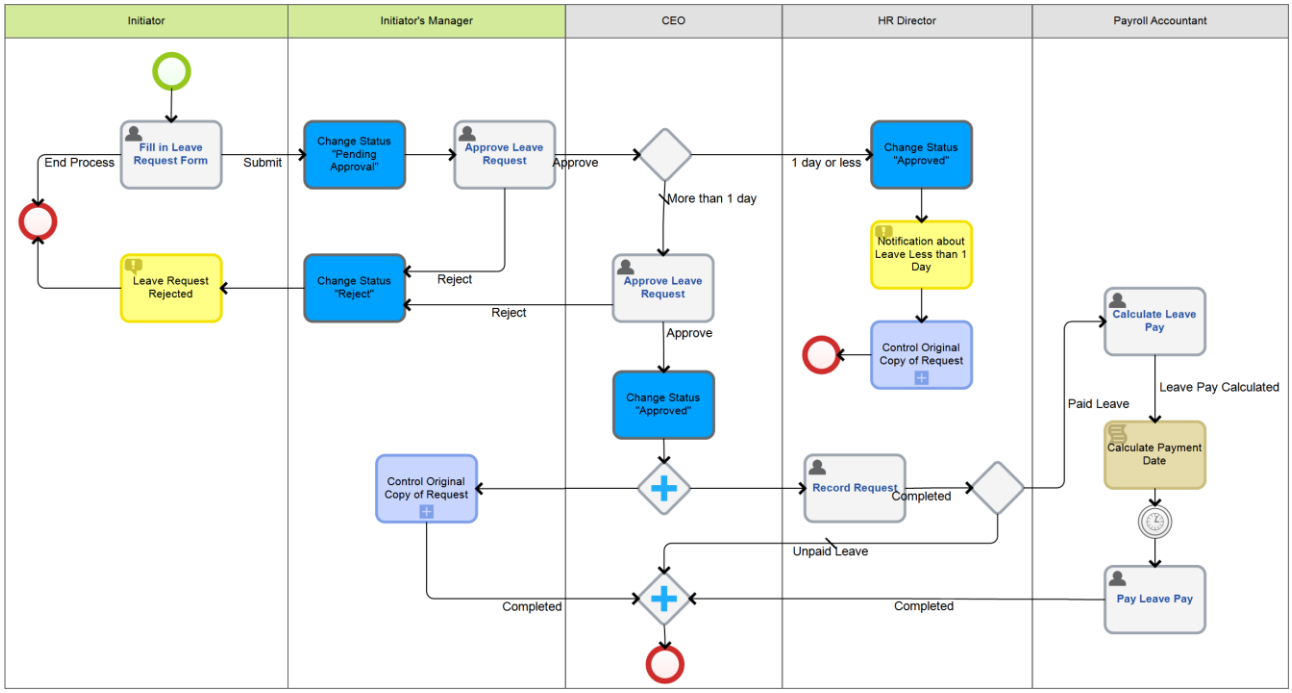


Fig. 182. The process map with an Internal sub-process

5.7.8.2 External Sub-Process

External sub-process is a business process executed in its own context. The sub-process passes data to the parent process via the input and output context variables, scripts and **Send Message** and **Receive Message** activities.

You can start an external sub-process as an independent process. When you start an external sub-process with the **Multiple Execution** marker, **ELMA** will not suspend the execution of the parent process until the sub-process is completed; instead, it will proceed with the next parent process activity.

In **ELMA,** you can use external sub-processes:

- to hide or reveal additional levels of a business process and to make its graphic model more readable
- you can start a sub-process from different parent processes and at the same time allow an independent start (without a parent process);
- you can simultaneous start several sub-process instances from a single parent process.

To create an external sub-process:

1. Create a standard process as described in p. 5.1.2 of this book;

2. In **ELMA Designer**, in the left toolbar of the **Graphic Model** tab, find the **External Sub-Process** element. Place it in the process model. A window opens. In this window, you will see a list of available processes (Fig. 183). Select the required process and click **OK**.

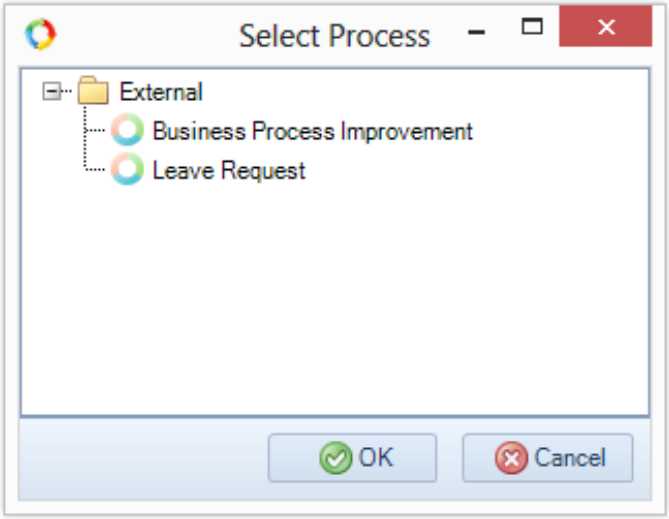


Fig. 183. Selecting the external sub-process

For the **Leave Request** process, create an external sub-process containing **Calculate Leave Pay** and **Pay leave pay** tasks. Name it as **Leave Pay** sub-process. The model of the **Leave Pay** sub-process will look as follows (Fig. 184):

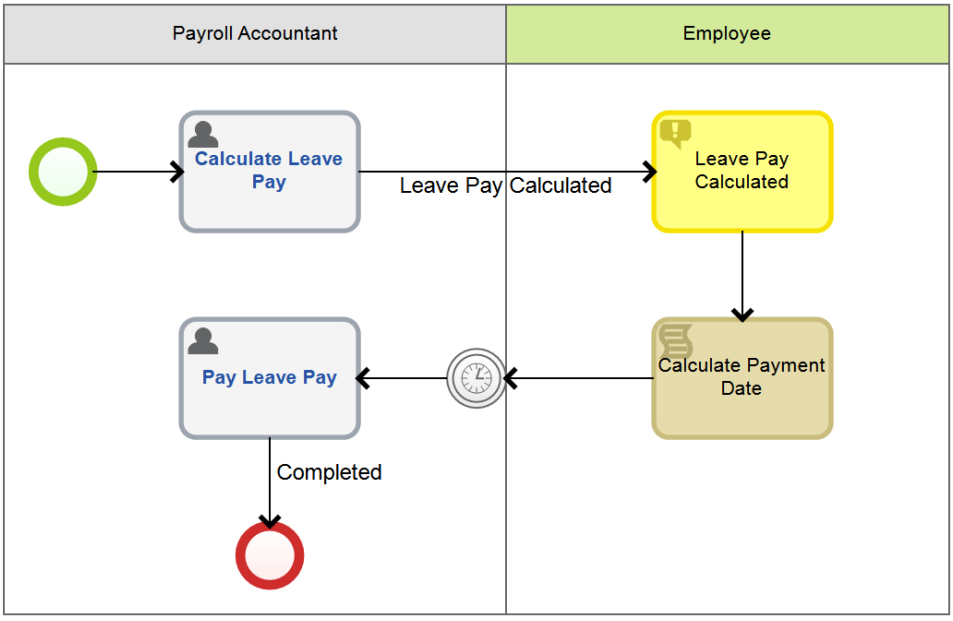


Fig. 184. The external-sub process map

Unlike the Internal sub-process, the external sub-process does not contain the context variables of the parent process.

Create the context variables for the **Leave Pay** sub-process. Check the **Input** box to pass the context variable values from the parent process to the external sub-process (Fig. 185).

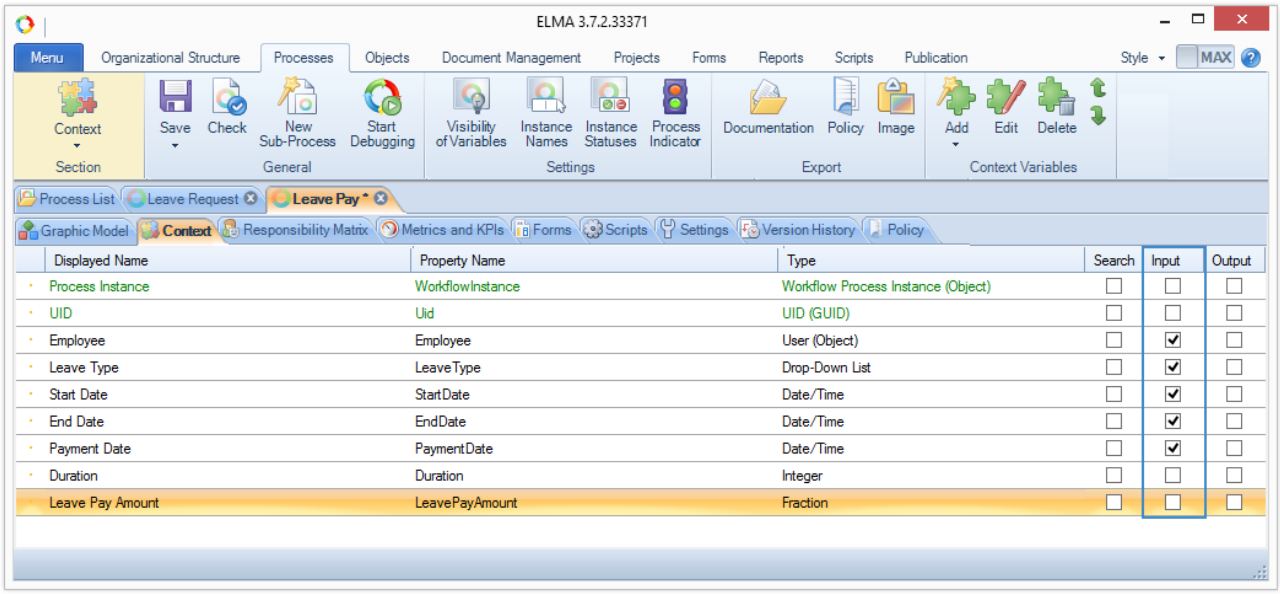


Fig. 185. The Leave Pay sub-process context

To add an external sub-process to the **Leave Request** process model you must edit the **Leave request** model as follows (Fig. 186):

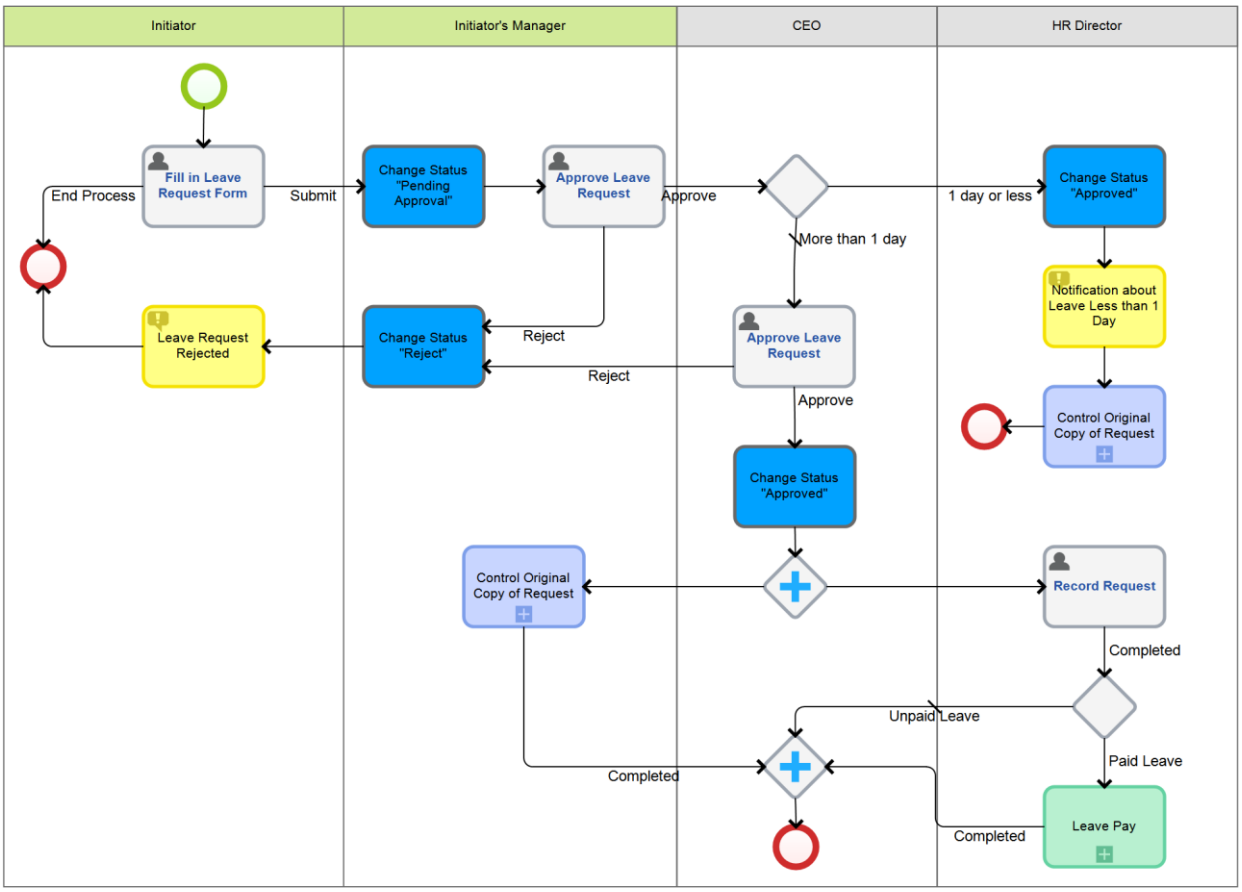


Fig. 186. Leave Request process with an external sub-process

You can delete the **Payroll Accountant** swimlane, since the executor of the tasks placed within this swimlane is defined in the sub-process.

Make additional settings to pass context variables from the parent process to the external sub-process. Click on the external sub-process element to open the settings window. In the **Input/Output Attributes** tab, you must define how the parent process variables match the context variables of the sub-process (Fig. 187). Click on the current value in the **Parent** column. From the drop-down list, select the variable that will match the sub-process variable.

The sub-process variable and the matching parent process variable must be of the same type. In the drop-down list, you will see only the variables of the type specified in the Type column next to the variable name.

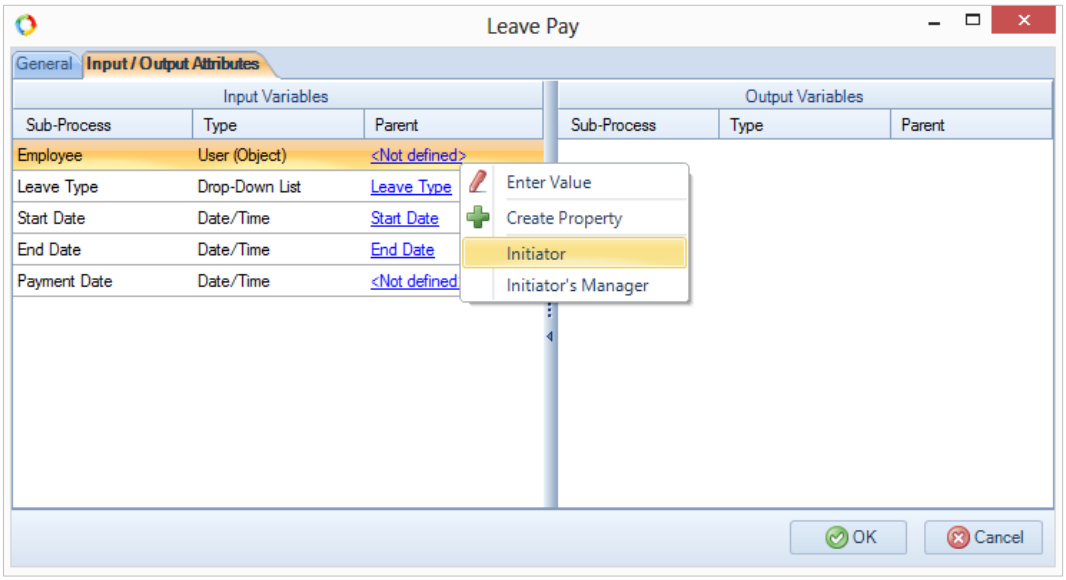


Fig. 187. Configuring input/output attribute for an external sub-process

Save and publish the external sub-process independently of the parent process.

Use the external sub-process element and special markers to edit the parent process model as follows (Fig. 188):

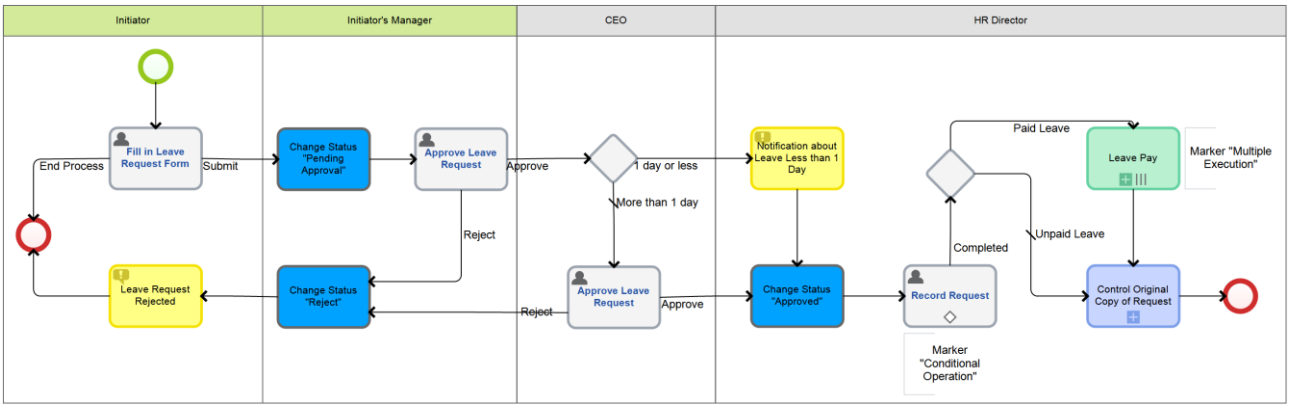


Fig. 188. A variant of the Leave Request process model

For the **Consider Request** task select **Conditional Operation** marker and set up the condition: execute if the duration is more than one day (or the Start and End dates have different values). **ELMA** will execute this task only if the specified condition is met; otherwise, the process will continue its flow directly to the next gateway.

For the external sub-process, select the **Multiple Execution** marker. Now in case of the regular paid leave, the **Leave Pay** sub-process will start; at the same time, the **Leave Request** process will continue its flow directly to the next activity. **ELMA** will not delay the execution of the **Leave Request** process until the sub-process is completed, i.e. both processes will start in parallel.

Chapter 6. Web Portal

The **Web Portal** forms the basis of **ELMA**. The **Web Portal** is a standard component of the system; it is a system platform and it forms the company's common information space.

One of the system features is that no programing is required to customize user interfaces.

The **Web Portal** settings are available in **Administration** → **Portal Settings** (Fig. 189).

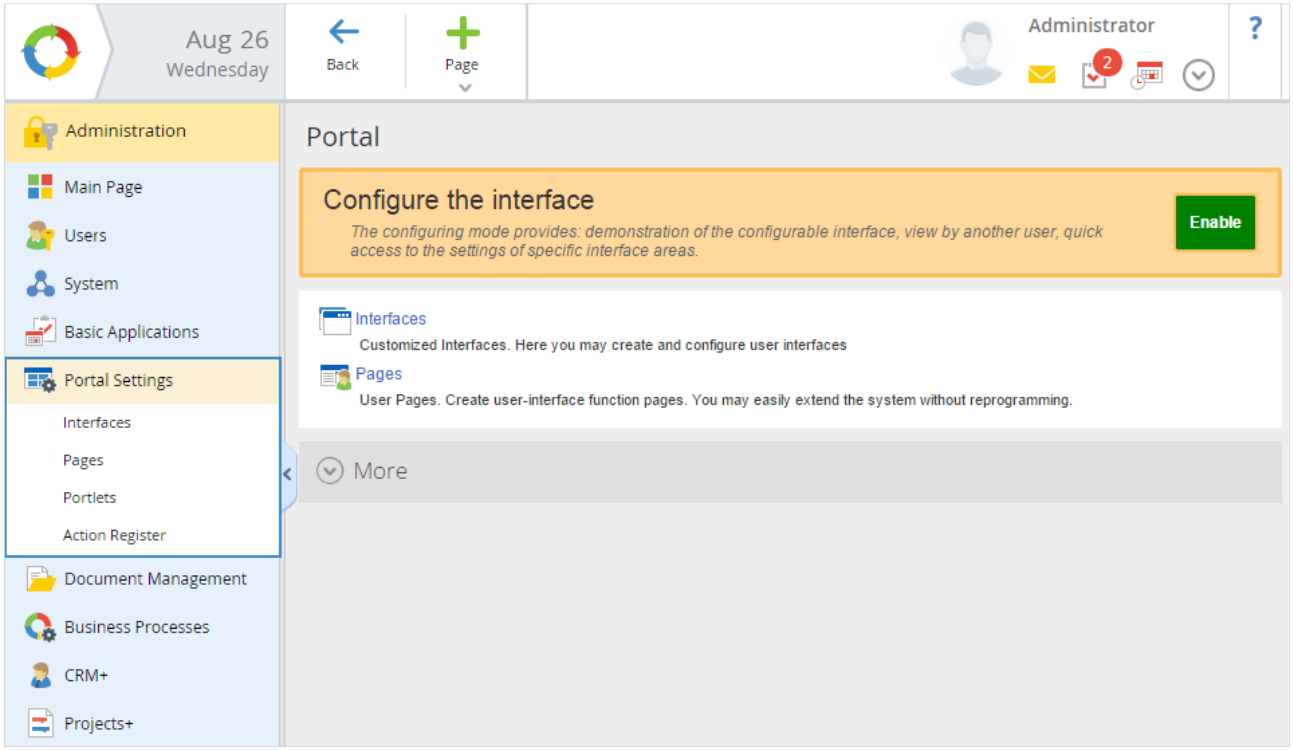


Fig. 189. Administration → Portal Settings

6.1 Configuring interface

To improve usability and provide quick access to the necessary information it is recommended to configure different interfaces for specific user groups.

For each user group you can configure an individual interface, and customize the display of the main page. E.g., the main page for the sales department can contain contract templates and links to the appropriate processes etc.; while the main page for the secretary can contain links to document registration processes and instructions for mail handling and processing.

Within a user interface, you create new pages and set up their content.

You can configure and manage interfaces in **Administration** → **Portal Settings** → **Interfaces**. This section contains the list of interfaces. Initially the list contains only **Default Interface** and **Lite**.

Default Interface is an interface every user has by default; it contains default pages and sections depending on the user's access permissions.

Lite interface is a special simplified interface created for the users who work with a limited number of functions. A too complex interface is only an obstacle for such users (Fig. 190).

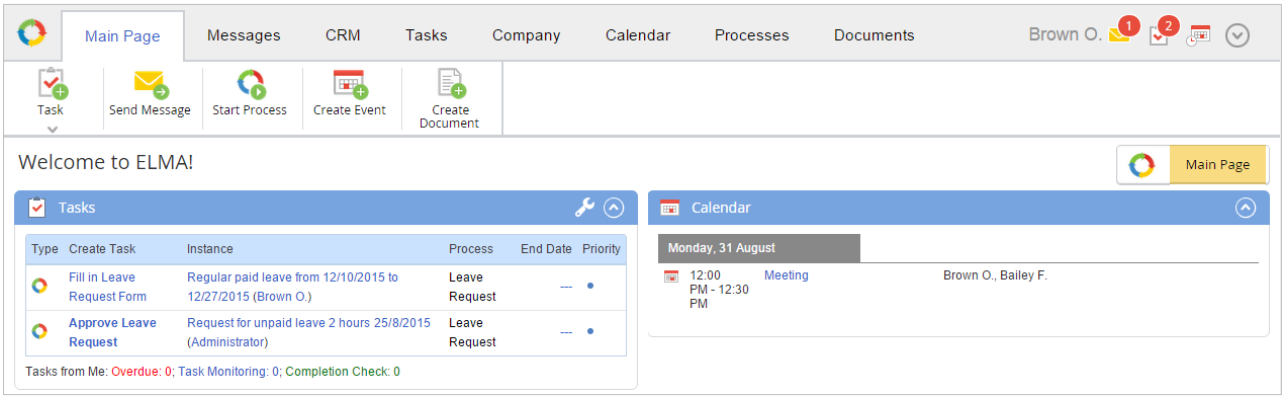


Fig. 190. Lite Interface

You can customize interfaces for every user. To do this, go to **Administration** → **Users** → select a user → on the user's page click **Edit** button. In the **Interface** field, select the type of the interface and click the **Save** button (Fig. 191).

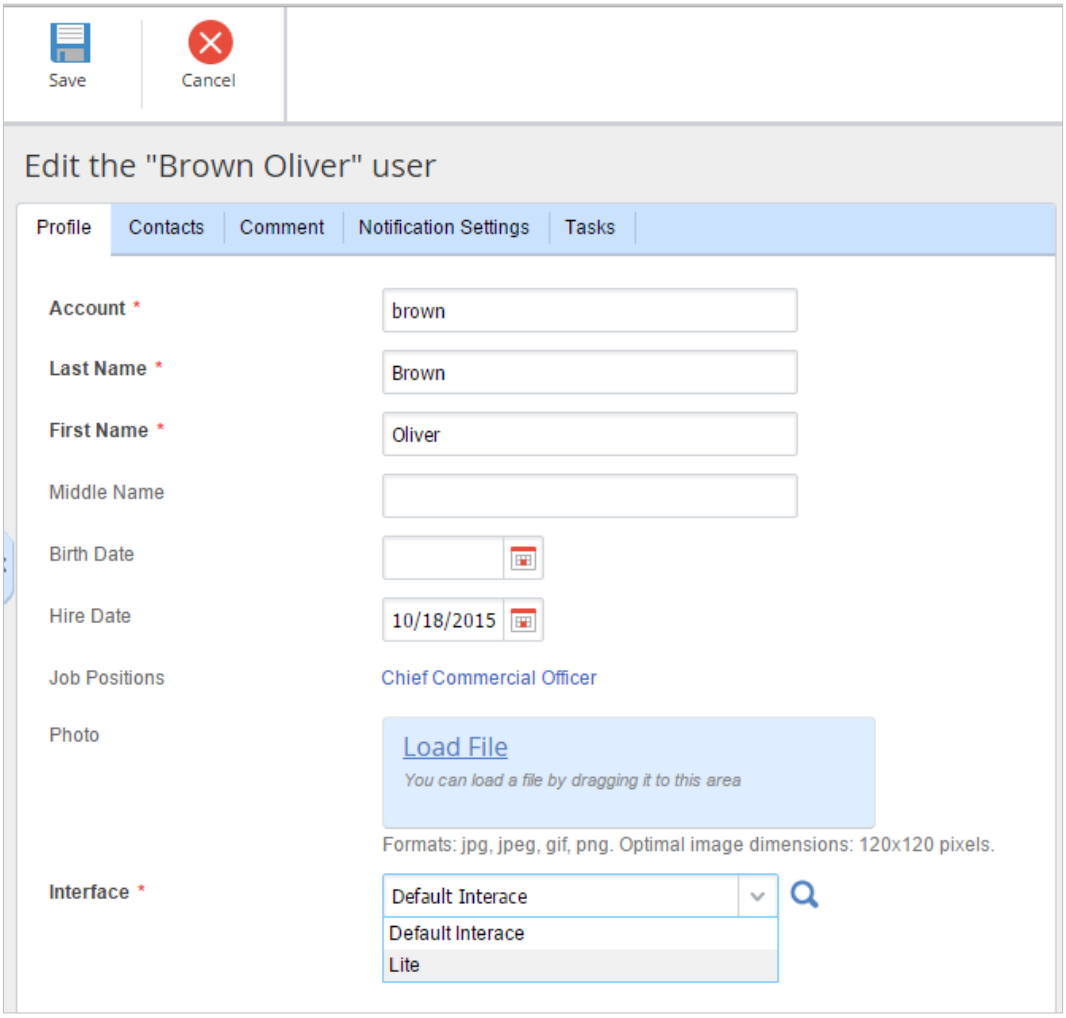


Fig. 191. Editing a user profile

Create a new interface for the HR Department. Sign in as ELMA Administrator (admin) and open **Administration** → **Portal Settings** → **Interfaces**. Click **Add Interface** button. In the window that appears enter an appropriate name and click the **Save** button (Fig. 192). This new interface is intended for the users who hold the positions of the HR Director and HR Department Employee (as described before) (Fig. 191).

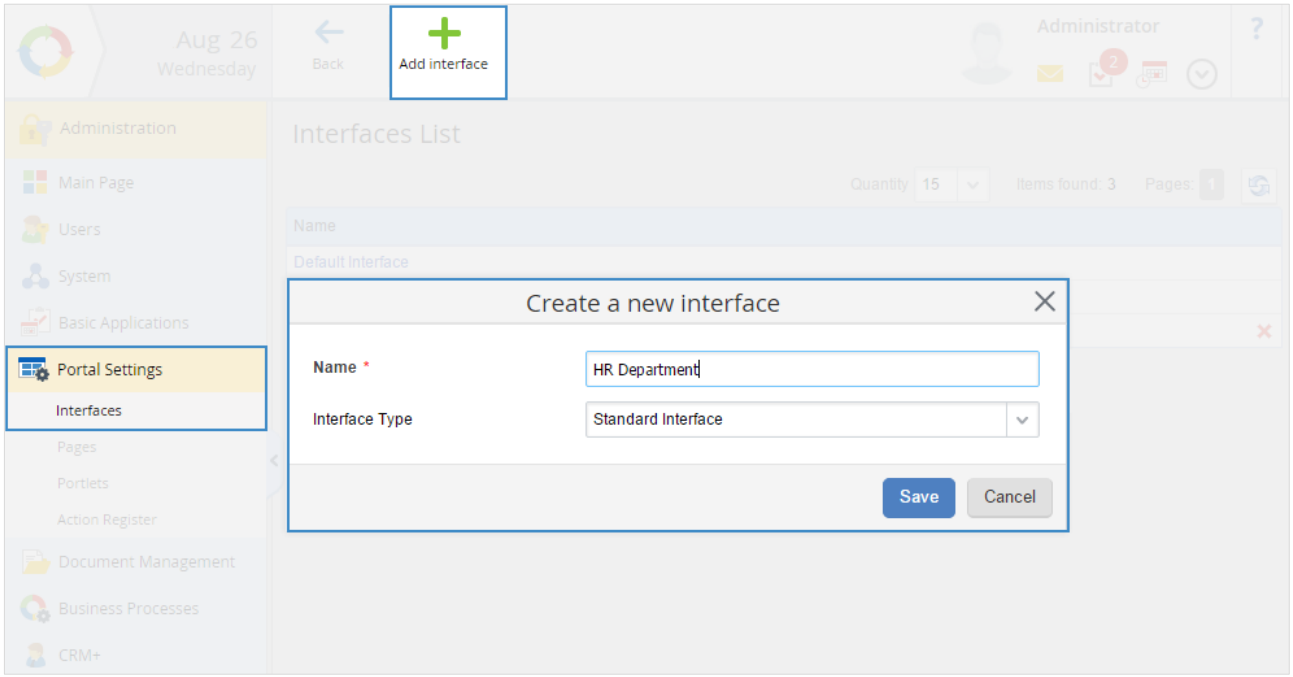


Fig. 192. Creating a new interface

Click on the interface name in the interface list to open the interface page with adjustable parameters (Fig. 193).

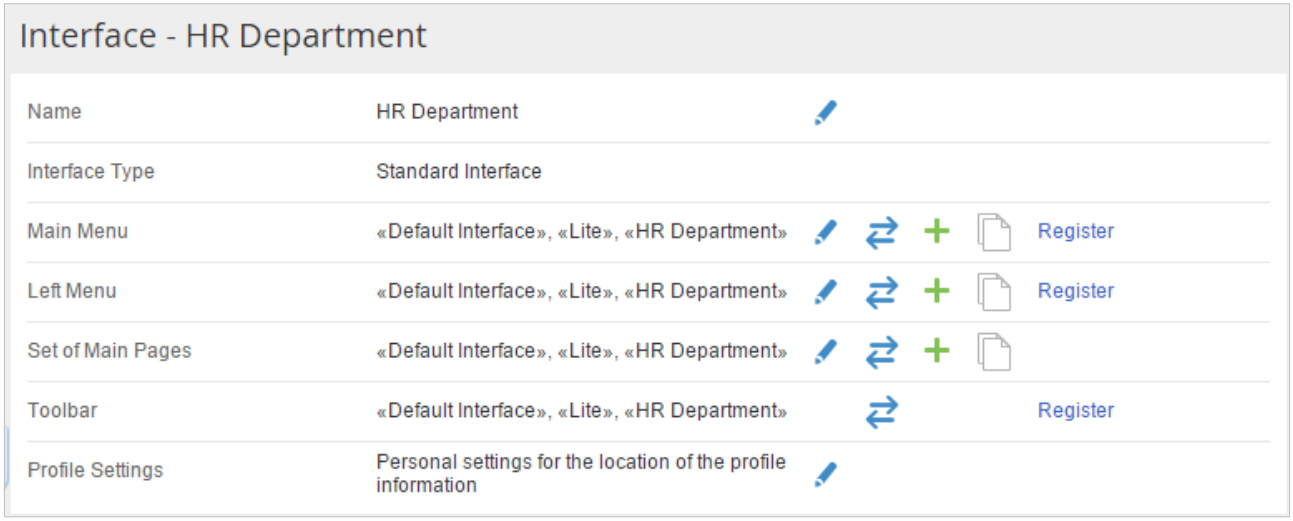


Fig. 193. A new interface card

You can also customize interfaces in the **Interface Visual Editor**. Comparing to the interface page, the **Visual Editor** has a larger number of options for interface configuration. On the interface page, you cannot customize the Toolbar or preview the customized interface. The other options are identical.

6.1.1. Visual Editor

You can easily configure interfaces in the **Visual Editor**. To enable the interface **Visual Editor**, go to **Administration** → **Portal Settings** and click the green **Enable** button (Fig. 194). Thus, you enter the setup mode. Now you can set up the current interface for the current user.

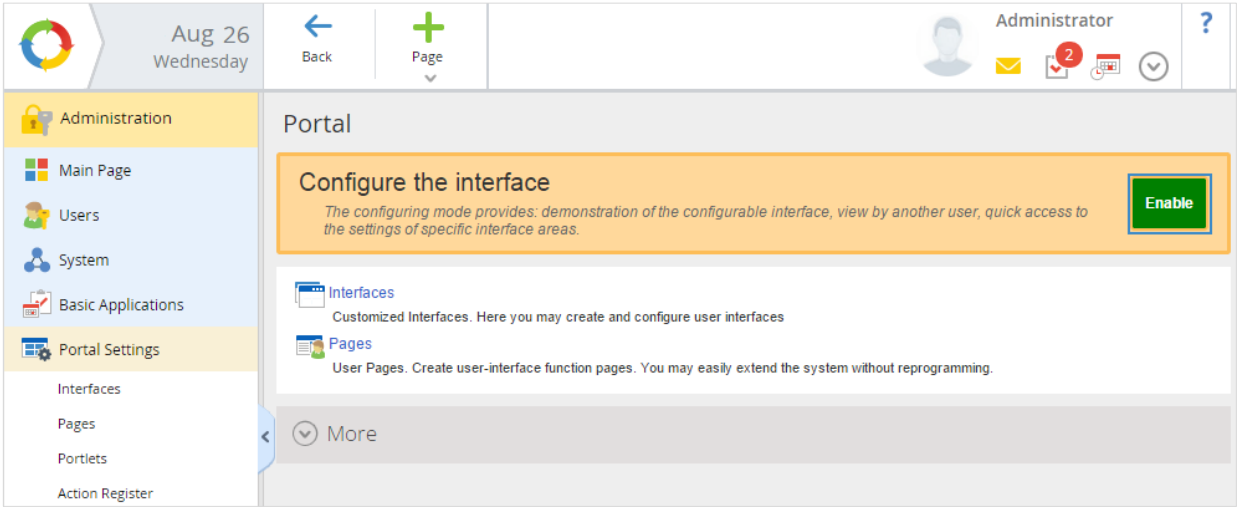


Fig. 194. The visual editor on/off button

After you have enabled the **Visual Editor**, an orange setup panel will appear at the top of the page (Fig. 195). To disable the interface setup mode, click the **Disable** button or the red cross icon on the **Visual Editor** panel.

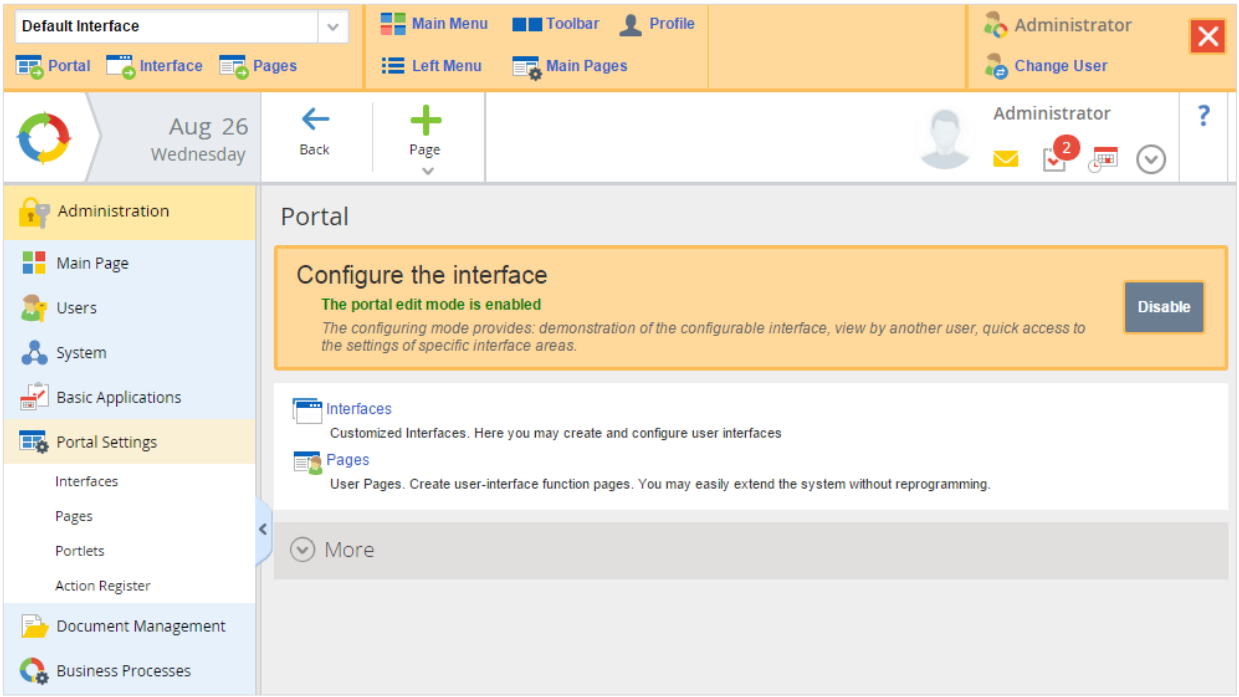


Fig. 195. The visual interface editor is enabled

Select the interface type you want to customize in the upper left corner of the visual editor. Click the links on the **Visual Editor** panel to edit relevant interface elements.

Use the **Visual Editor** to configure:

- The **main menu** of all the interfaces or of the selected interface;
- The **top toolbar** of the currently opened interface page. Each interface page has its own top toolbar; therefore, you must edit page toolbars individually;
- The **left menu** of all the interfaces or of the selected interface;
- The **set of main pages** of all the interfaces or of the selected interface;
- The **profile menu** contents for the currently selected user

In addition, when working in the interface setup mode you can quickly access **Pages** and **Interface** subsections of the **Portal Settings**: click the relevant links on the orange editor panel.

To preview the customized interface, click the **Change User** link and select the necessary user: you will see the portal of the selected user.

6.1.2. Menu settings

In **ELMA,** you can easily customize left and right menus. When you customize a menu, you:

- assign access permissions for the standard menu items;
- add new menu items;
- remove menu items.

To open a menu for editing you can use one of the following methods:

- on the panel of the **Visual Editor**, select **Main Menu** or **Left Menu** (Fig. 195);
- on the interface page, click icon next to the menu.

The left and right menus have similar settings.

Edit the main menu of the HR Department interface. In **Administration → Portal Settings** enable the **Visual Editor;** in the upper left corner select the interface you have created earlier for the HR Department. Then click **Main Menu** on the editor panel. Click **Create New Menu** to create an individual main menu for the selected interface (Fig. 196).

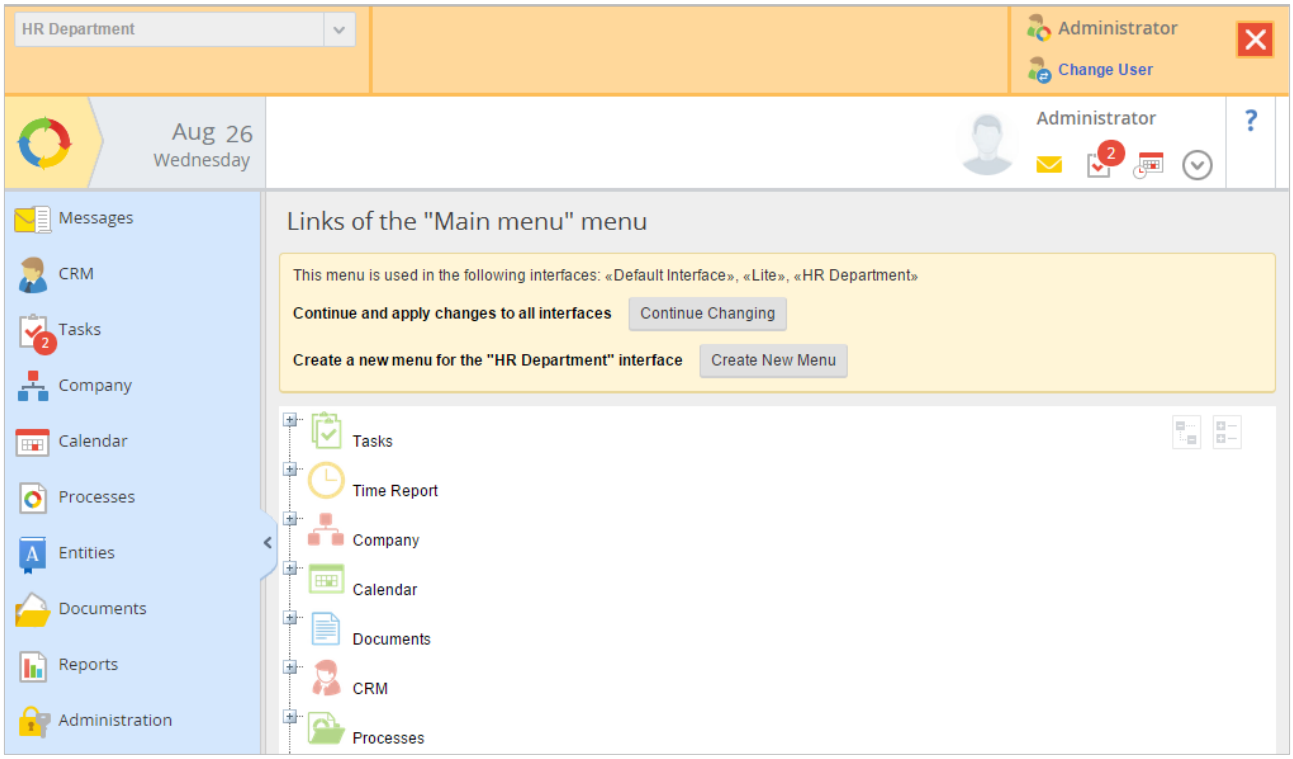


Fig. 196. The selection window. You can edit the menu of all interfaces or create a new menu for the target interface

After you have created a new menu, the menu settings page will open (Fig. 197). When you edit an existing menu or create a new one, **ELMA** will automatically save all the changes.

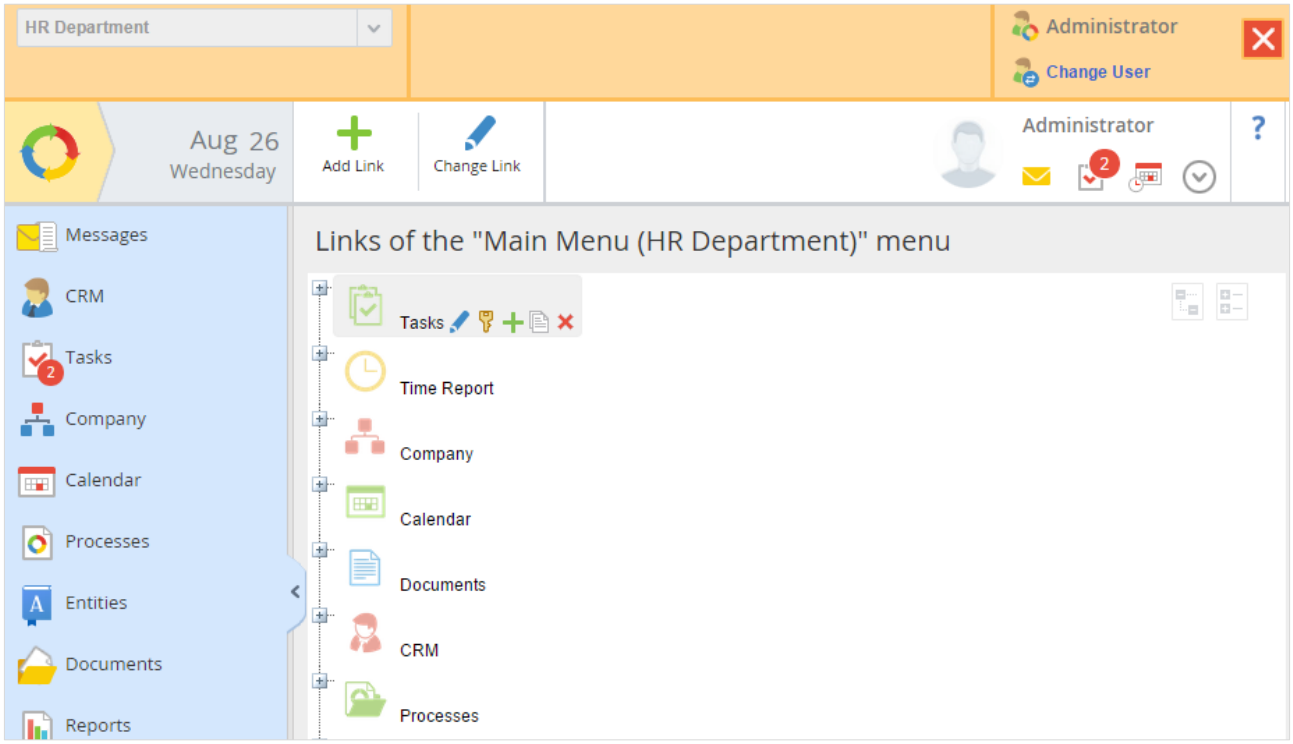


Fig. 197. The main menu setting page

You can perform the following operations with the menu items:

- add menu items;
- rename menu items or add new menu links;
- remove menu items;
- assign access permissions for the menu items;
- move the items in the list.

Move the mouse pointer to a menu item, its local menu will appear (Fig. 197, **Tasks**).

The local menu content:

- edit the menu item;
- assign access permissions for the menu item;
- add a menu sub-item;
- copy the menu item to another menu;
- remove the menu item;

Remove the unnecessary items from the menu of the HR Department interface: **CRM**, **Time Report**, **Administration**, **KPIs** and **Projects** (the last two items are only available if you have

installed the corresponding applications: **ELMA KPI** and **ELMA Projects+**). Remove the unnecessary **Records Management** sub-item in the **Documents** as well. The page with the new setting will look as follows Fig. 198:

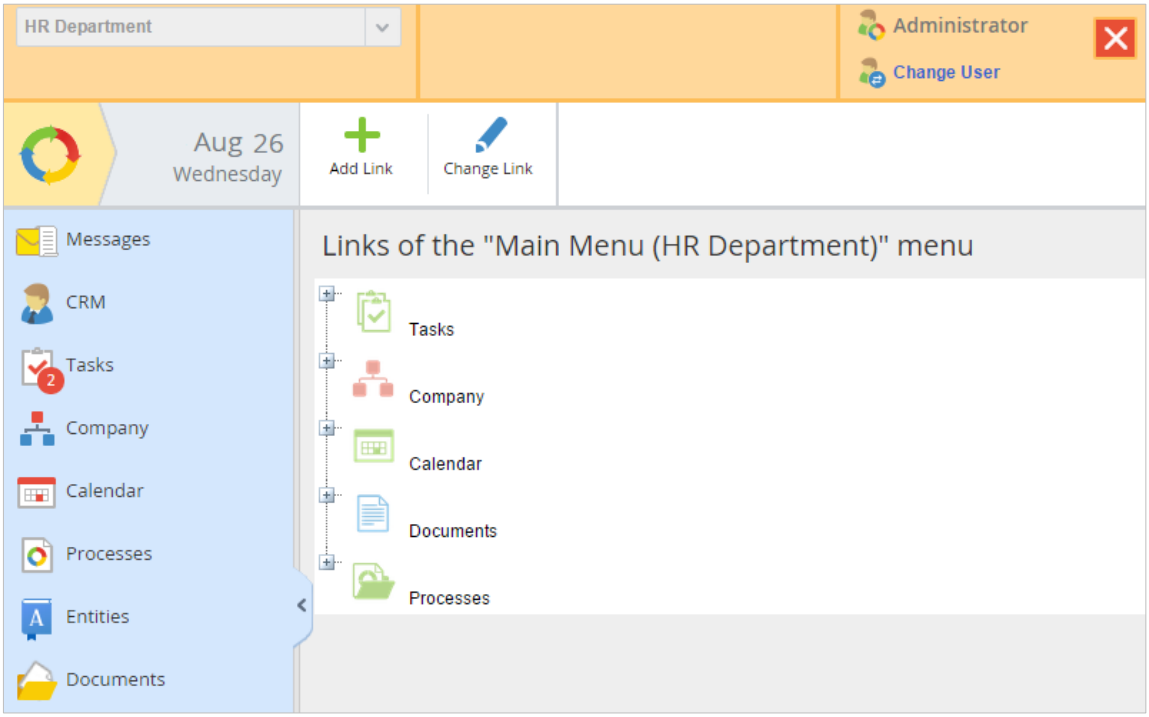


Fig. 198. Main menu links for the HR Department interface

Configure the left menu. Create a special left menu for the HR Department interface; on the settings page of the left menu remove the unnecessary sections (Fig. 199).

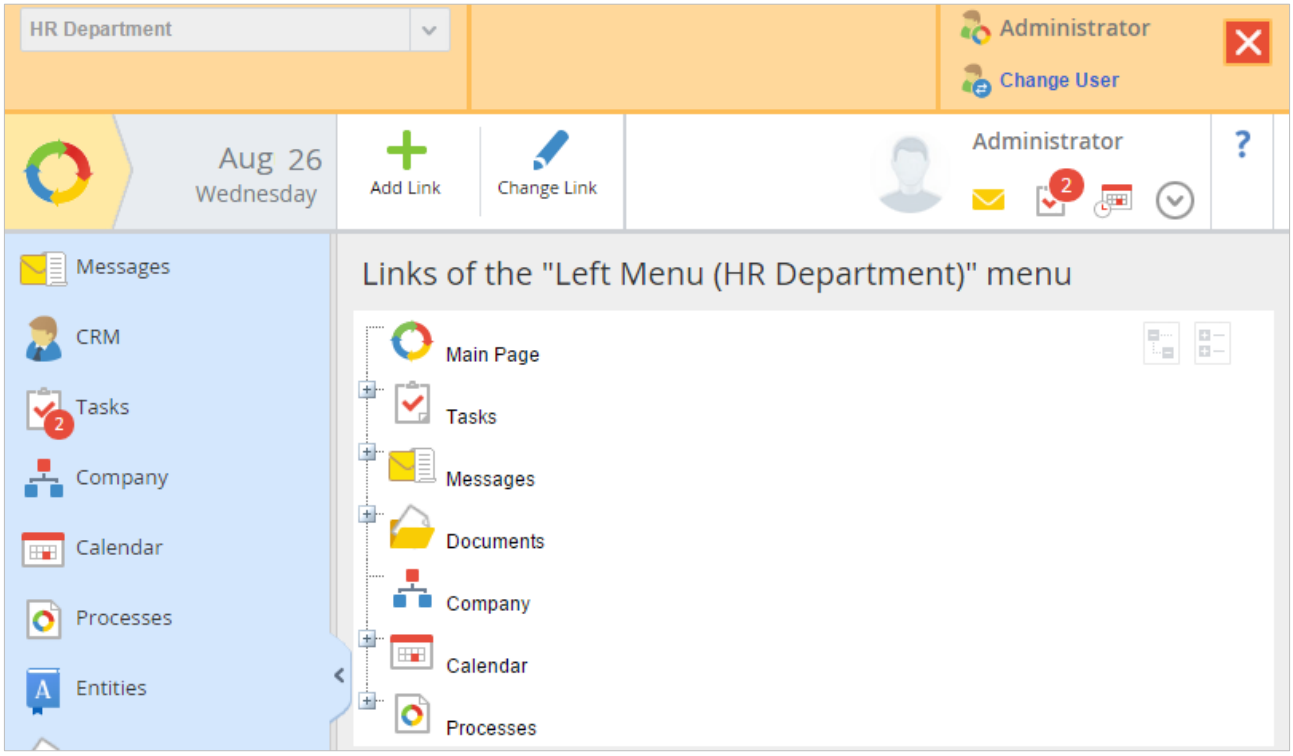


Fig. 199. Left menu links for the HR Department interface

Preview the changes in the main and left menus of the HR Department interface. In the upper right corner of the visual editor panel click the **Change User** link and sign in as the user for whom this interface is intended. Open the main menu. The main and left menus will not display the sections removed during the interface setup (Fig. 200).

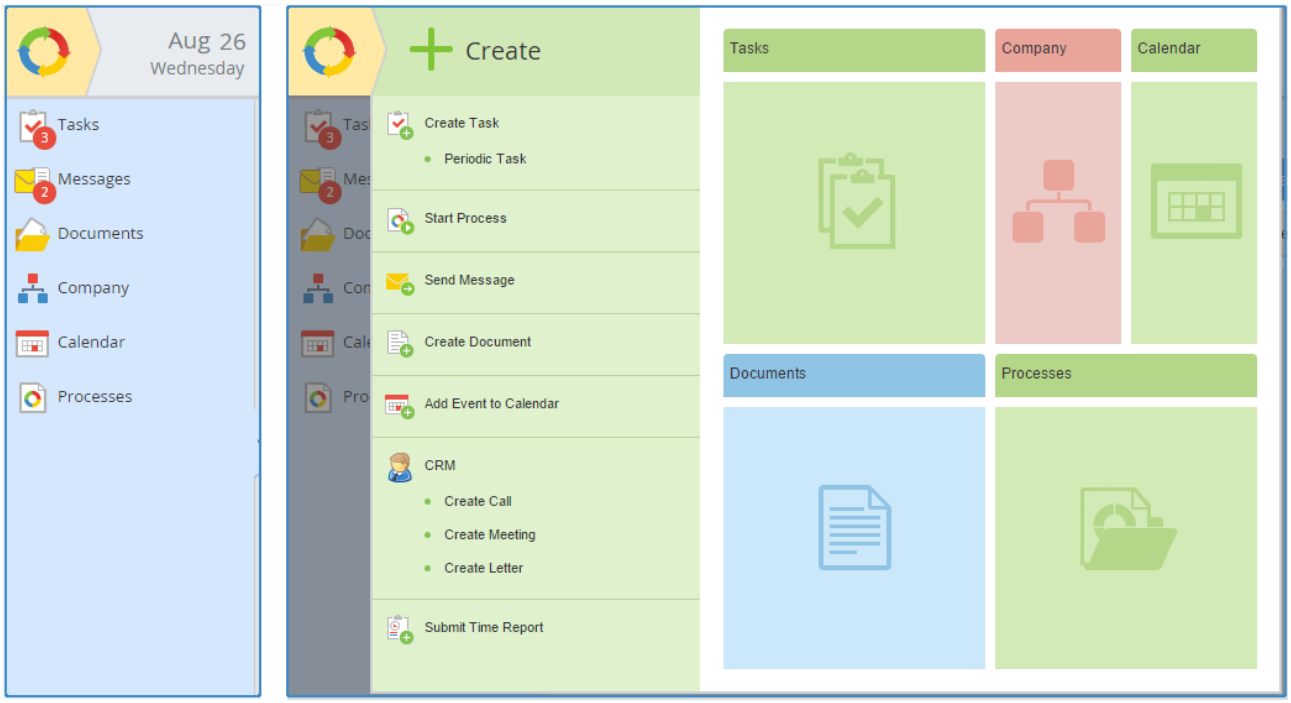


Fig. 200. Edited left and main menus of the HR Department interface

Creating a new menu item

To create an additional item for the left or main menu, click the **Add Link** button on the menu settings page (Fig. 198 - Fig. 199). A window opens (Fig. 201). Make sure you enter a name and select an action.

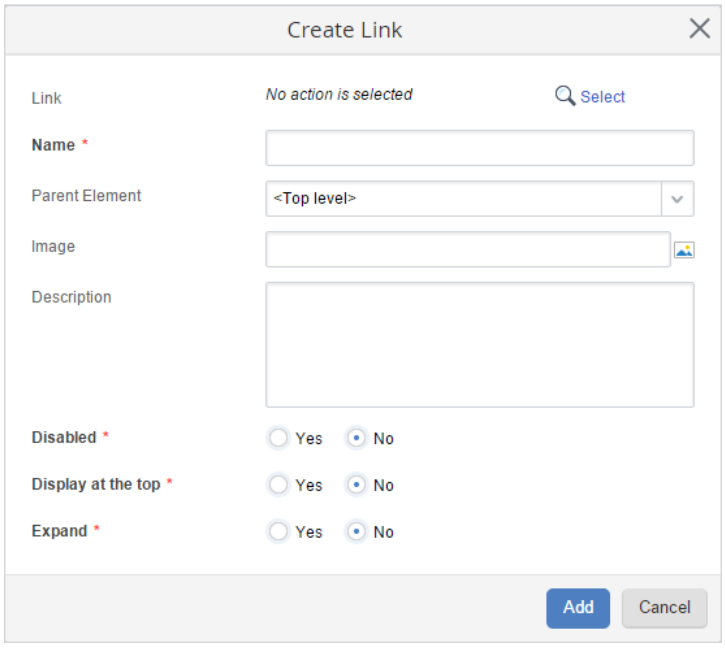


Fig. 201. The Create Link window

In the **Parent Element** field select the link location (section or sub-section); you can also assign an image and enter a description of the menu item.

To **Disable** the menu item switch between **Yes** and **No**. If you select **Yes**, the menu will not display this item.

For the left menu you can also select additional options: **Display at the top** (display the item name at the top of the menu) and **Expand** (select **Yes** if you want to hide all the other menu items, and **No** if you want to display them).

Click the **Select** link, the **Select Action** window opens. This window contains a list of the most frequently selected actions (Fig. 201). If you have not find the appropriate action, click **More** to open an extended list with all the available actions (Fig. 202).

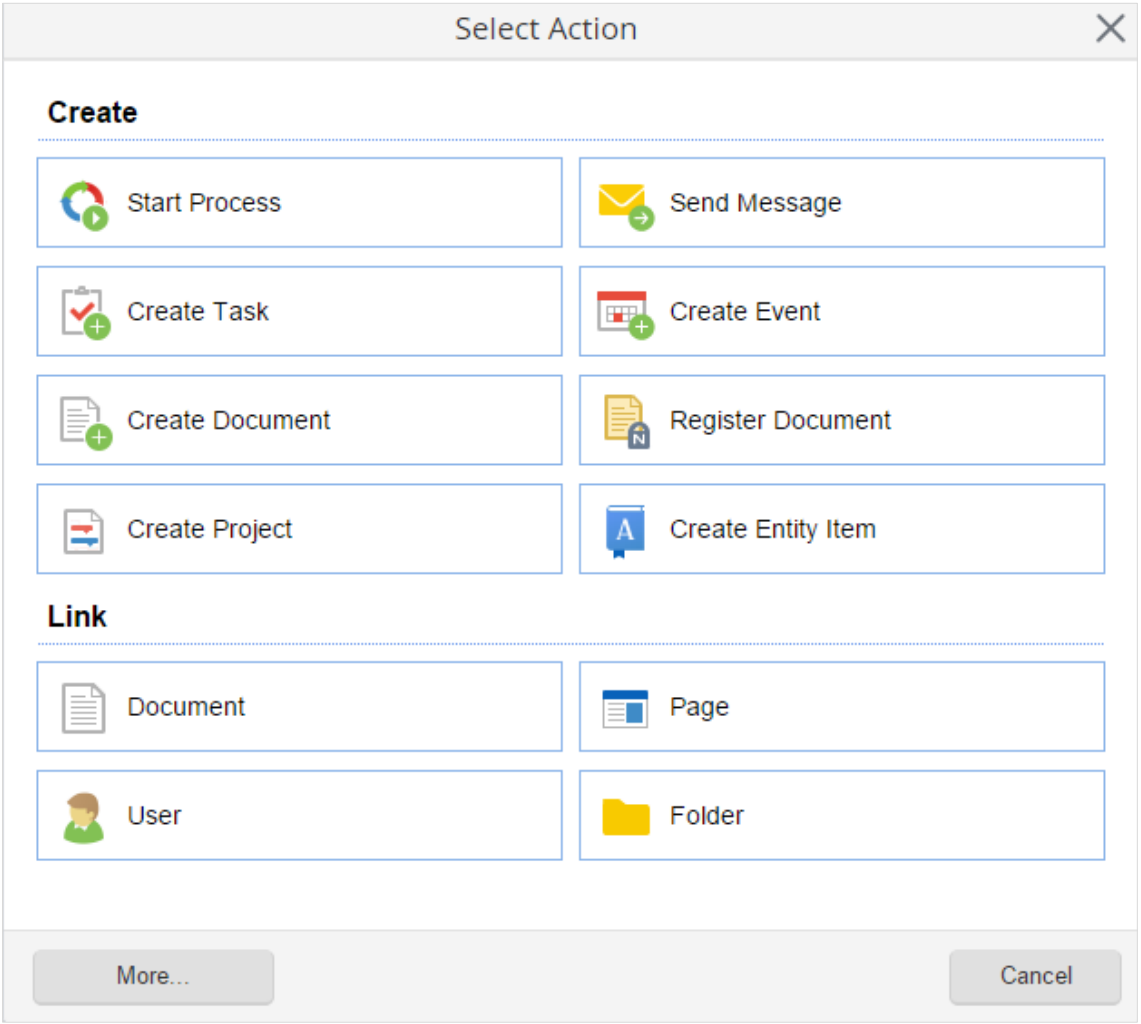


Fig. 202. The Select Action window when creating a menu link

In the left menu, create a link to the folder that will contain the HR Department documents. First, create the folder. In the **Documents** section, select **Shared Folders.** Click the **Folder** button on the toolbar. Enter and save the new folder name. A new folder is created. Now create a link in the **Visual Editor**, in the setup mode of the HR Department interface.

In the **Create Link** window, click **Select** and select **Folder** from the actions list. The **Folder Action Parameters** window opens. In this window, click the magnifying glass icon to select the created folder (Fig. 203). Click the **Select** button to confirm and the **Done** button to save the folder parameters.

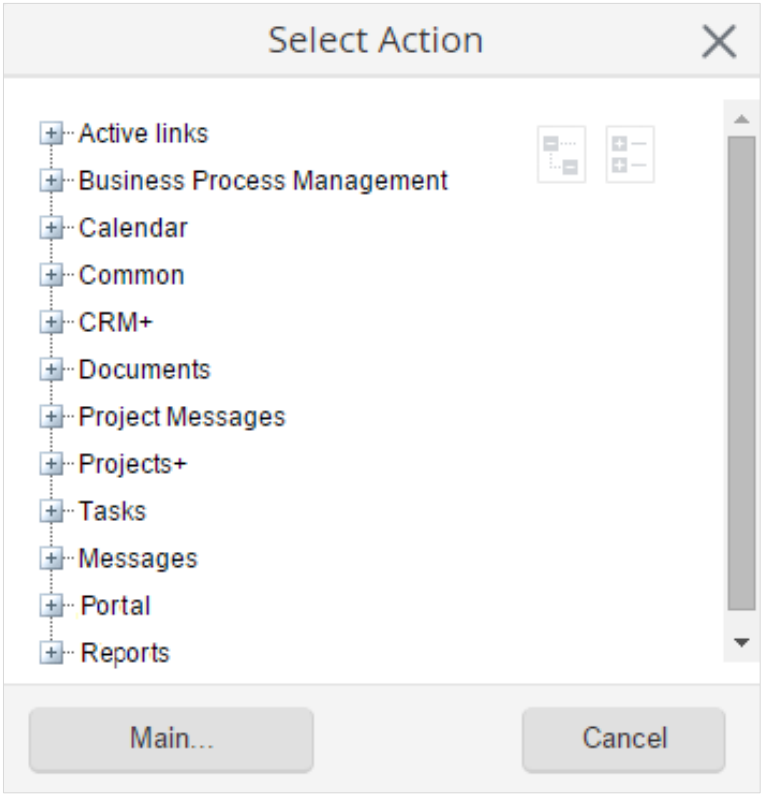


Fig. 203. The Select Action window when clicking More

Assign an image for the link. Now the left menu settings look as follows Fig. 204:

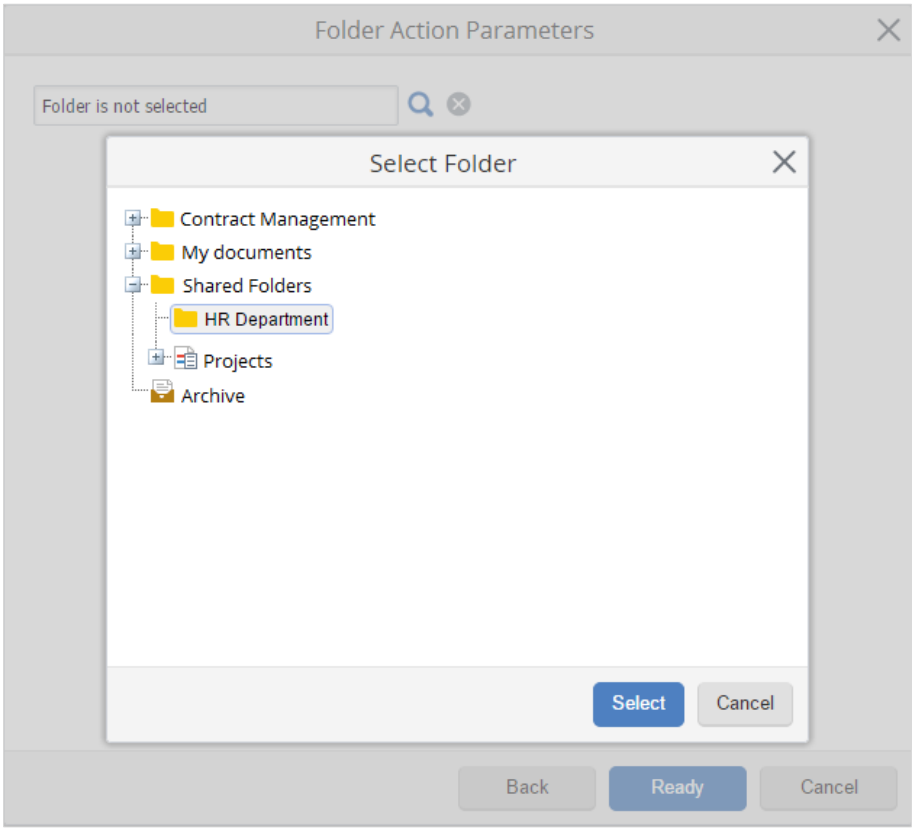


Fig. 204. Configuring the Folder action

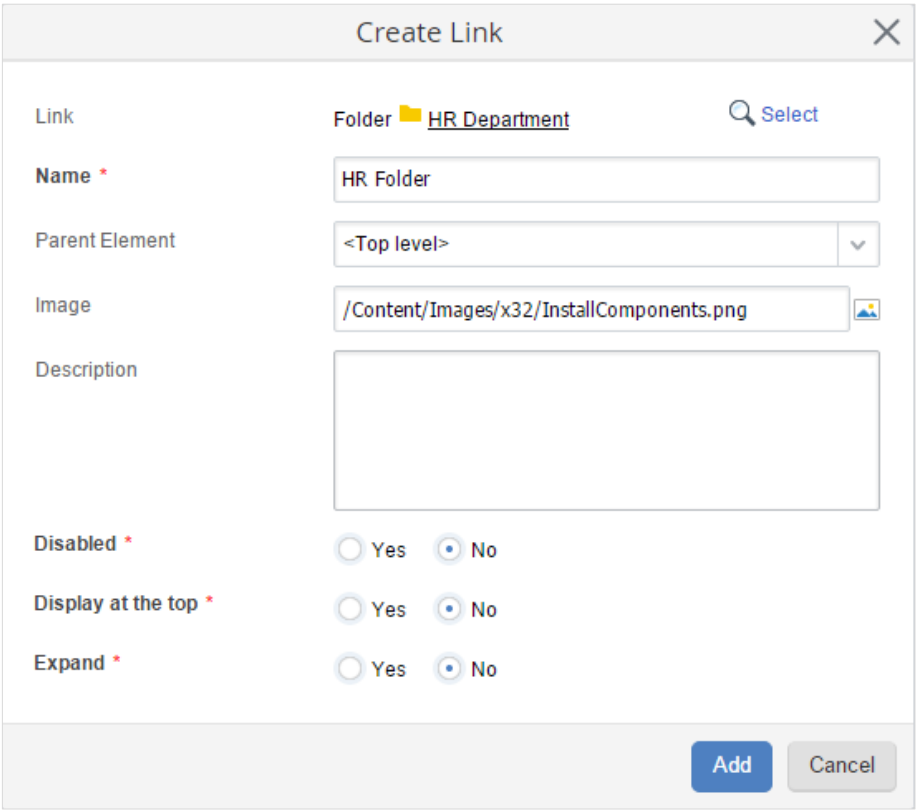


Fig. 205. Creating a link to a folder

Click **Add**. Drag and drop the created link to the list of the left menu items. Place the link below the **Documents** section. In **ELMA Web Application**, this link will look as follows (Fig. 206):

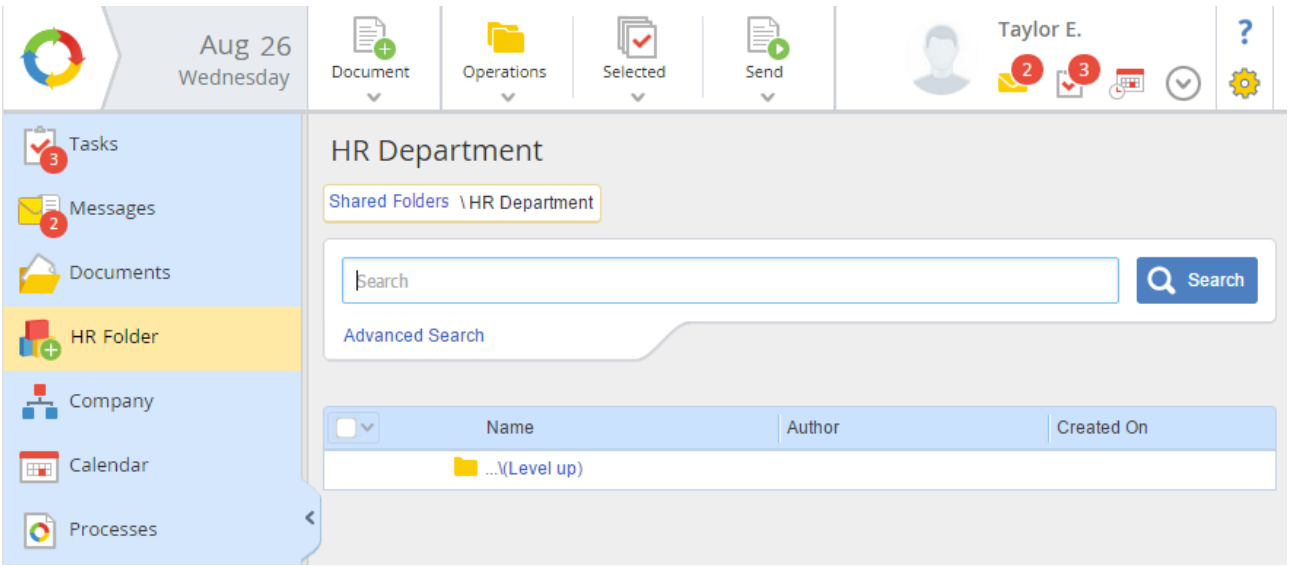


Fig. 206. The new HR Folder section in the left menu

If you click the **HR Folder** in the left menu, the folder with the **HR Department** documents will open.

Thus, you can easily add and remove menu items to improve usability of **ELMA Web Application**.

6.1.3. Toolbar

A toolbar is a panel across the top of a page that contains buttons. Different pages of **ELMA** have different toolbars.

In the **Visual Editor**, you can configure the toolbar of any system page. To do this, go to the required page and click **Toolbar** button on the **Visual Editor** panel (Fig. 207).

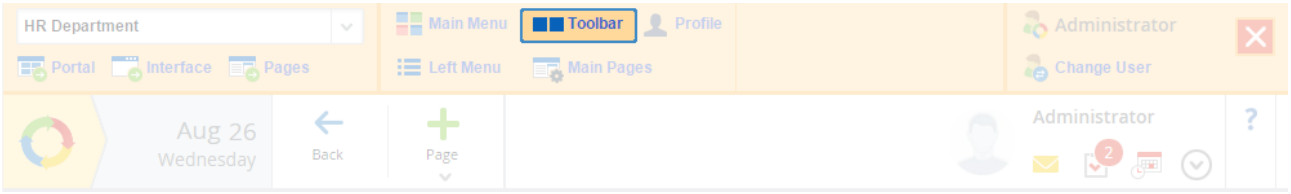


Fig. 207. Click the Toolbar button to open the toolbar settings

For example, edit the main page toolbar of the HR Department interface. In the setup mode of the HR Department interface, go to the main page and click **Toolbar** on the editor panel to open the toolbar settings page (Fig. 208).

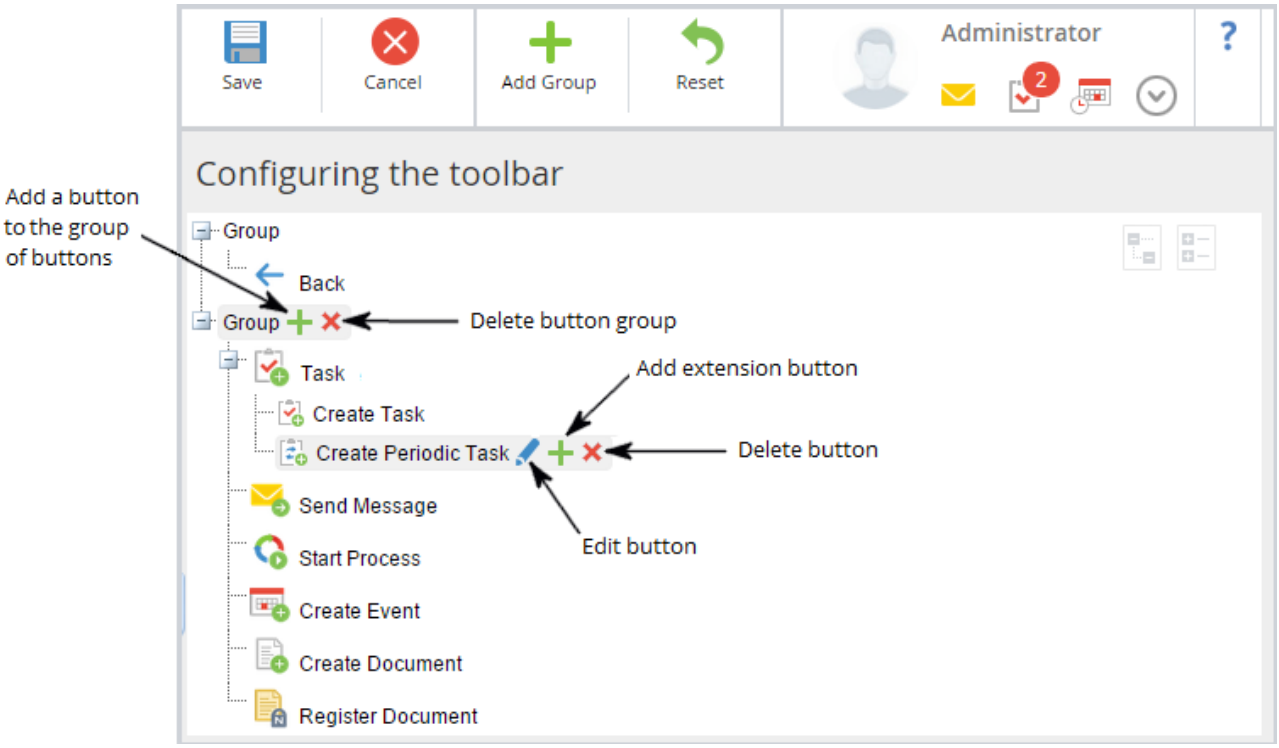


Fig. 208. Configuring the toolbar of the main page

Make the following changes: remove the **Register Document** and **Create SMART Task** buttons, add the **Search Document** button.

To remove buttons click the red cross icon next to the button name.

To add the **Search Document** button as a separate group, click **Add Group**. A new group will appear at the end of the list. Click the green "+" next to the group name. A pop-up window will open. In the **Edit button** window, select an action for the button, enter a name and assign a button image.

To select the **Document Search** action, click **More** in the **Select Action** window (Fig. 209).

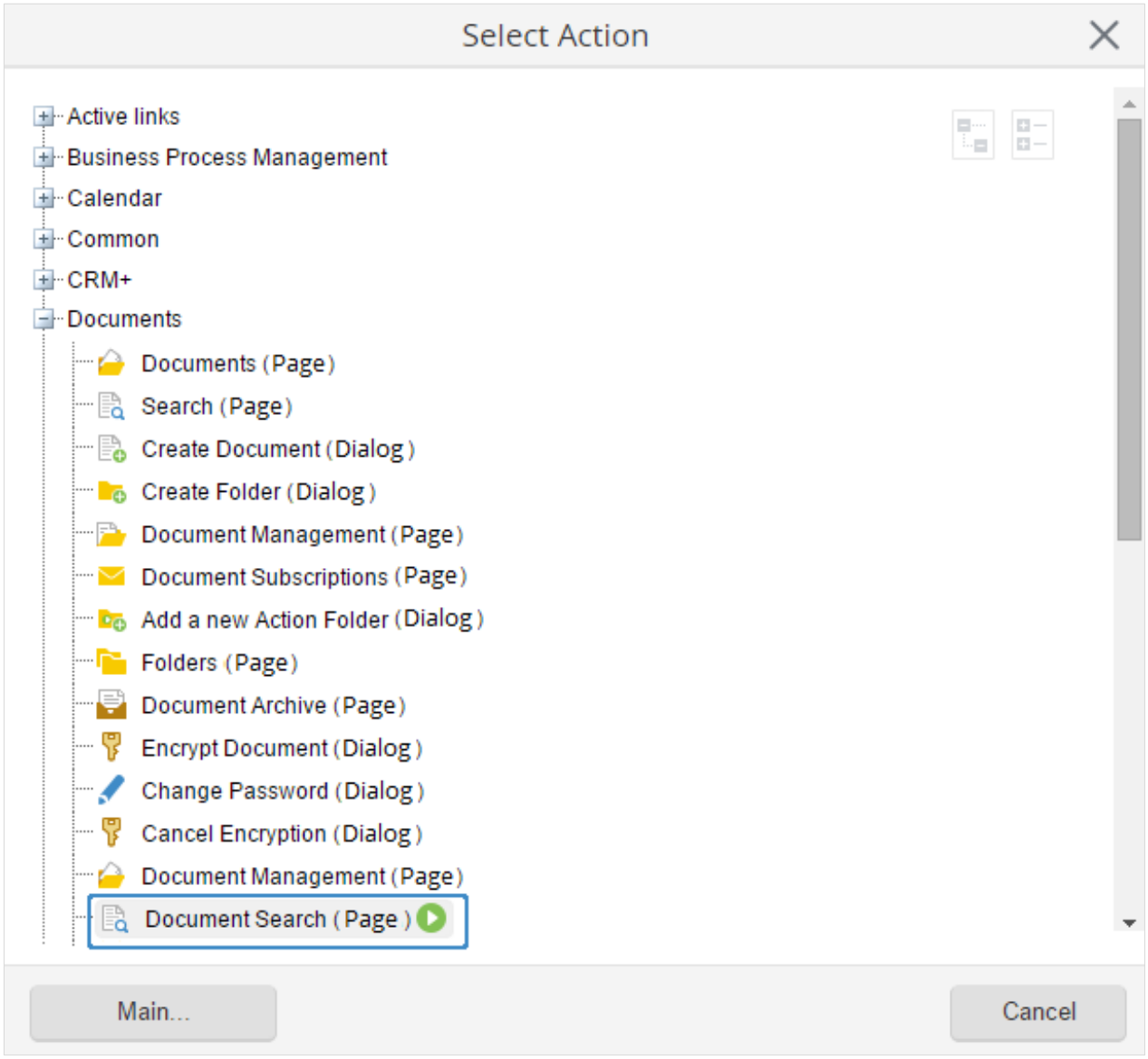


Fig. 209. Selecting button action in the Select action window

Set up the **Edit button** window as follows (Fig. 210):

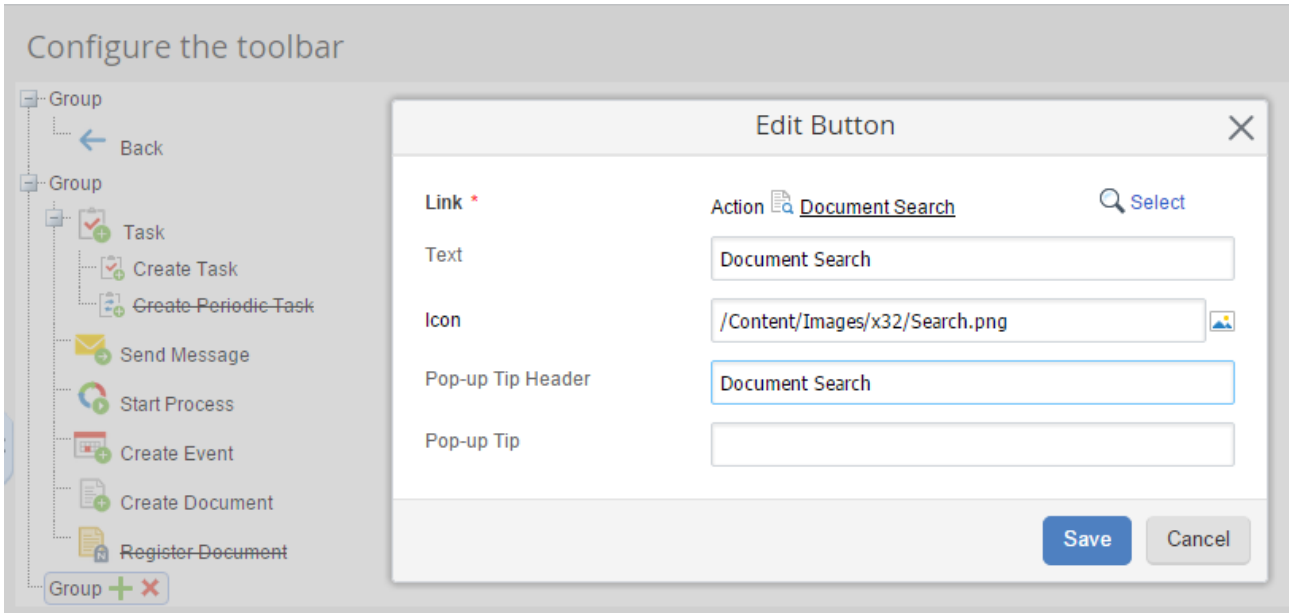


Fig. 210. The Edit Button window

Save the toolbar button settings. Now, in **ELMA Web Application**, the toolbar of the HR Department interface will contain the **Search Document** button. Click this button to open the document search window. The toolbar will not display the **Register Documents** and **Create SMART Task** buttons (Fig. 211).

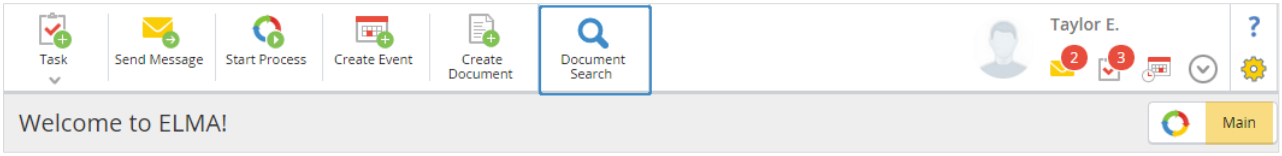


Fig. 211. The edited main page toolbar

6.2 Portal pages

In **ELMA,** you can quite easily configure the Web Portal pages. The user can see the page content in the center of the browser window. Any page contains specific portlets displaying relevant information.

Below is the list of the page types in **ELMA**:

- **Main pages** are designed to arrange portlets; for quick access to the main pages you can create links in the menu or a set of main pages;

- **Text (portlet) pages** - Text pages designed for specific tasks. They can also contain portlets. For quick access to the text pages you can create links in the menu or a set of pages;
- **Role pages** – Role pages can contain several standard and/or main pages. You can assign access permissions for these pages to different users. Role page settings define which content the user will see. **ELMA** displays different content depending on the access permissions of the current user.

View the list of all the pages, edit or create pages in **Administration** → **Portal Settings - Pages** (Fig. 212).

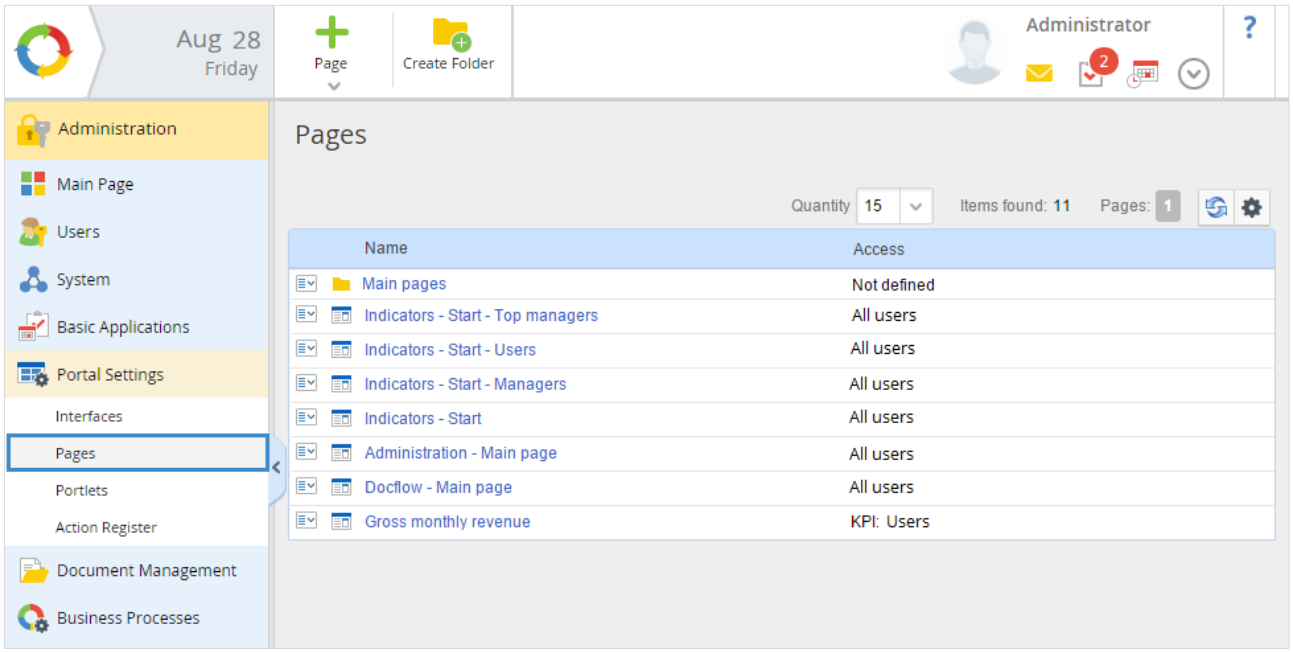


Fig. 212. The list of all portal pages

6.2.1. Creating a Page

You can create all types of pages in **Administration** → **Portal Settings** → **Pages**. To do this click the **Page** button on the toolbar (Fig. 212). This button also has a drop-down list that allows you to select the type of the new page. By default, it is a portlet page (main). You can also create a main page in the interface setup mode: click **Main Pages** in the target interface.

Create the main page for the HR Department interface. Click the **Page** button. Enter a page name and define the number of columns. Click **Save** (Fig. 213).

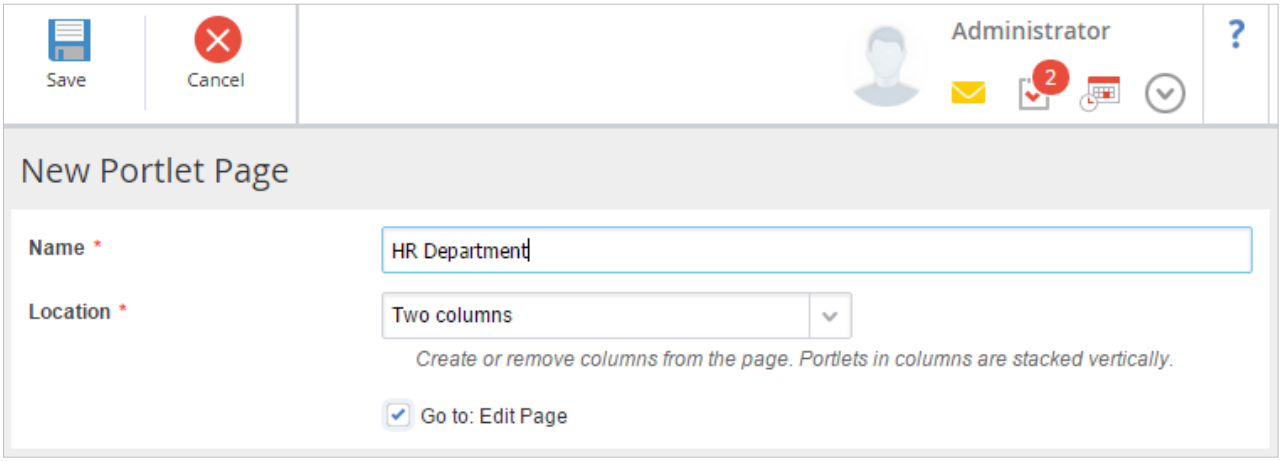


Fig. 213. Creating a main page

On the portlet page, you can adjust the arrangement of portlets. You can arrange them in one or two identical columns or select the custom arrangement (select this option in the **Location** field). If you select custom arrangement, you can add several page areas and arrange them in one or two columns of the same or different widths.

Check the **Edit page** box if you wish to start editing the page content immediately after saving (Fig. 214); otherwise, the page will open for preview.

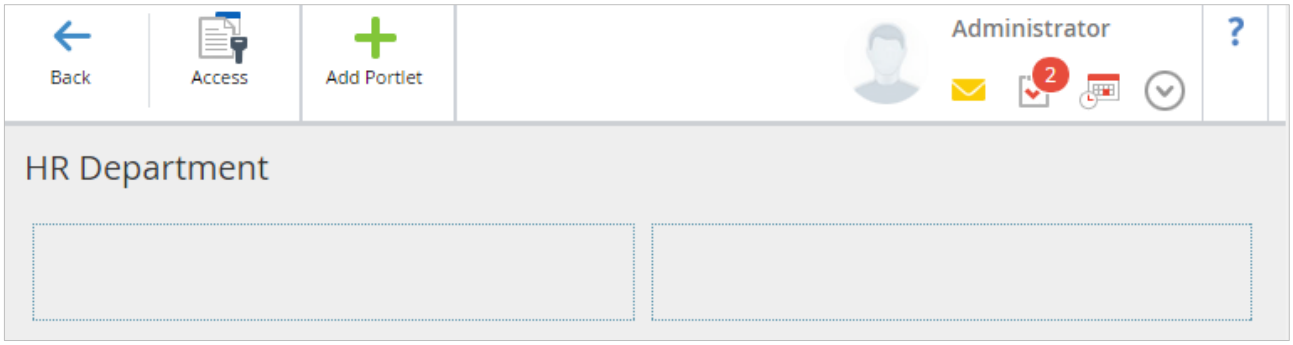


Fig. 214. A new main page without content

After the page is created, only the author (the user who created this page) has access to it. Therefore, you must assign permissions for users to provide access to this page.

To assign access permissions, click **Access** button on the page toolbar. Add users who will have access to this page (HR Director and HR Department employees).

Below see the description of the page configuration.

6.2.2. Configuring page

Configure pages in **Administration** → **Portal Settings** → **Pages** (Fig. 212).

When configuring a page you can:

- add and delete portlets;
- assign access permissions to the page;
- set up portlets;
- edit the page display (the number of columns).

To configure the page, in the page list, next to the page name, click the list icon. The context menu will open; select **Configure** (Fig. 215).

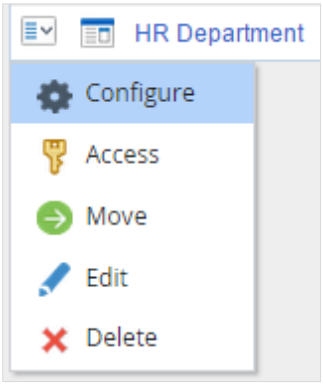


Fig. 215. Page context menu

When configuring a page you mostly arrange portlets within the page and configure portlets settings. For more information about portlets, see **ELMA Help**.

Add portlets to the HR Department page: **Tasks**, **Tasks from Me**, **Calendar**, **Messages**. Click the **Add Portlet** button on the top toolbar. **Portlet catalog** will open. Select the portlet and then click **Add Portlet** at the bottom of the **Portlet catalog**. Drag the portlets to the content area of the page; arrange them in two columns in the correct order. You can drag the portlets up and down, from one column to another. To move a portlet, click on it once with the left mouse button and while holding it, move the portlet to the desired location on the page, then release the mouse button.

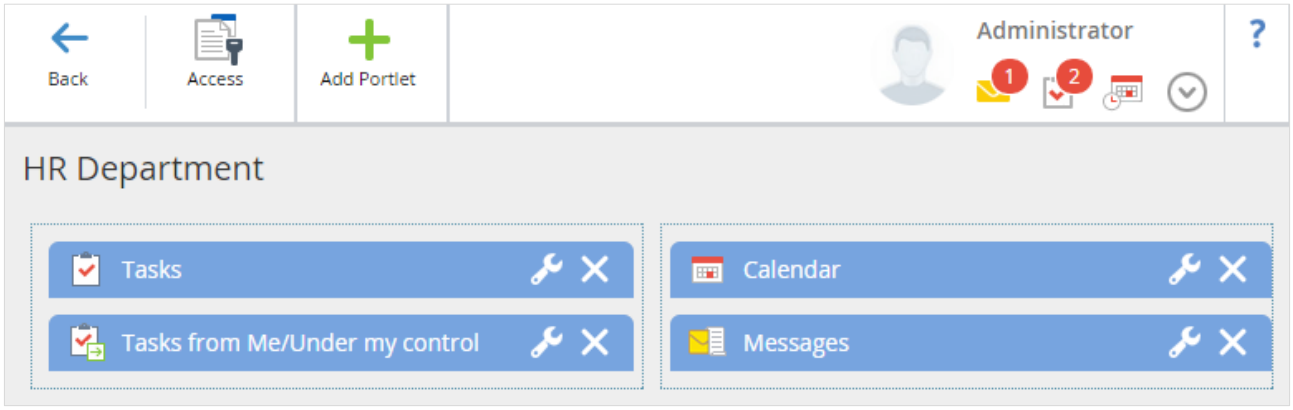


Fig. 216. Added portlets when setting up the page

Next to the header of each portlet, you will see two icons: click  to configure the portlet, and  - to remove the portlet.

To add this page to the HR Department interface configure the **Set of Main Pages** in **Administration → Portal Settings → Interfaces.**

Create a new set of main pages for the HR Department interface. Click the green cross next to the **Set of Main Pages** (Fig. 217).

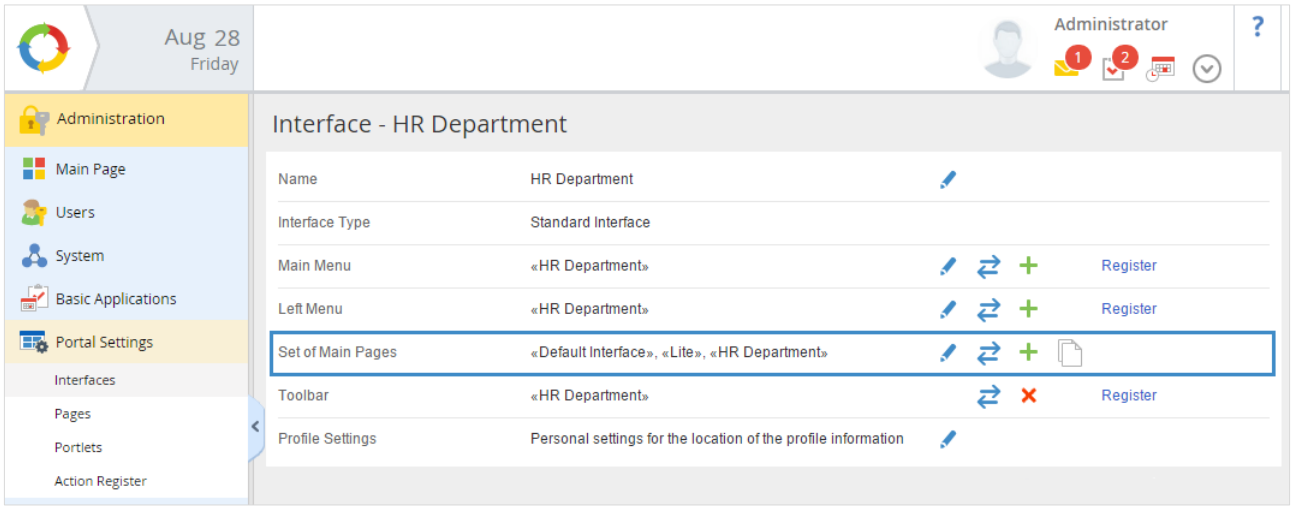


Fig. 217. Configuring the HR Department interface

The page will open. In this window drag a page name from the left side (Page Manager) to the right (Selected Pages) and save the changes (Fig. 218).

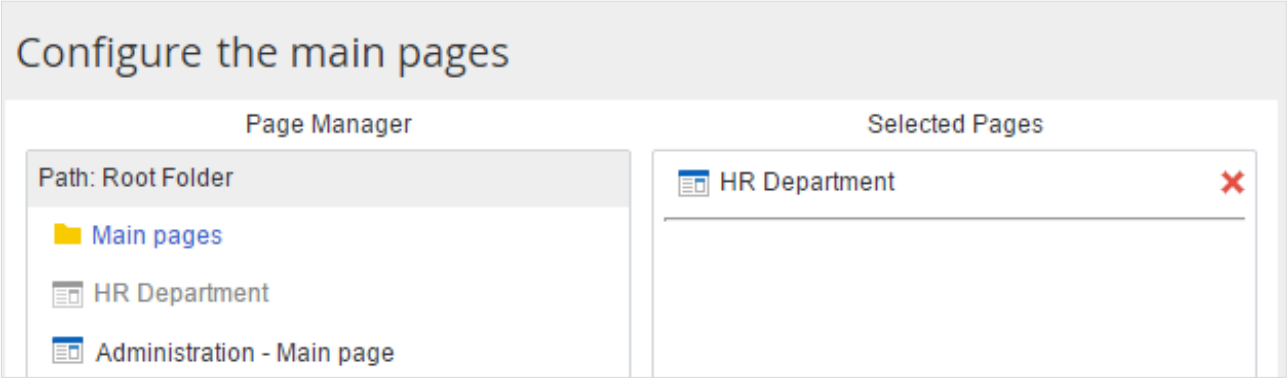


Fig. 218. Configuring the main pages

Now the main page of the HR Department interface looks as follows Fig. 219:

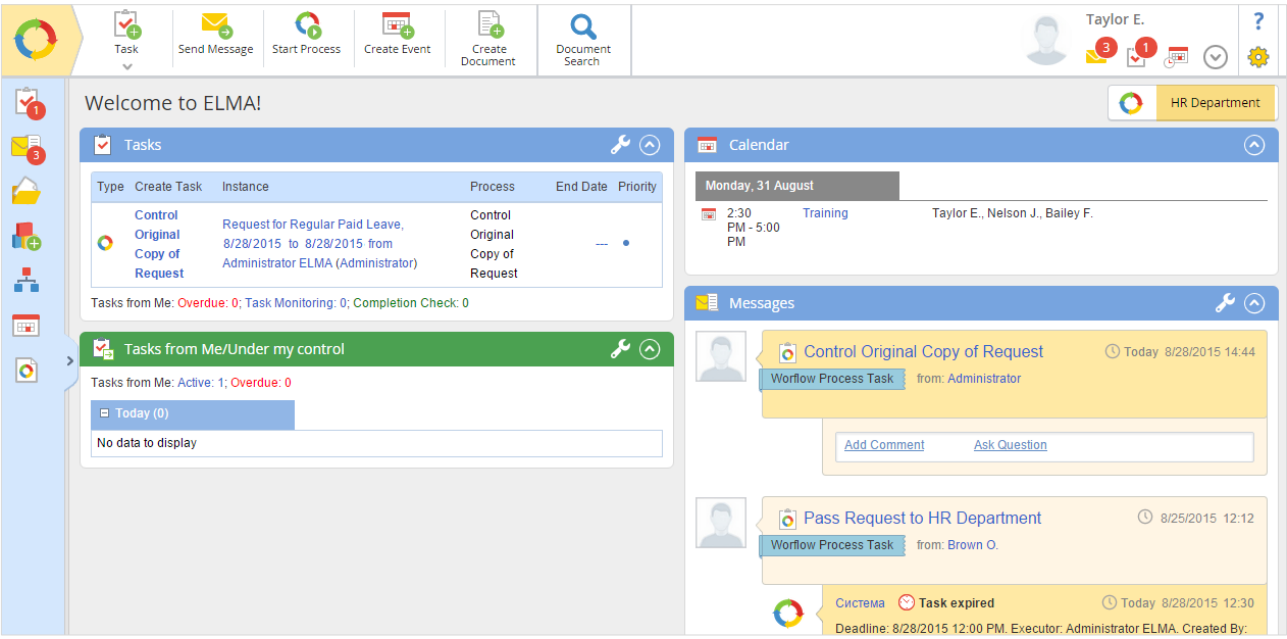


Fig. 219. Modified main page

6.2.3. Configuring the set of main pages

All the available main pages can be displayed as a set (Fig. 220) in the right corner of the portal page.

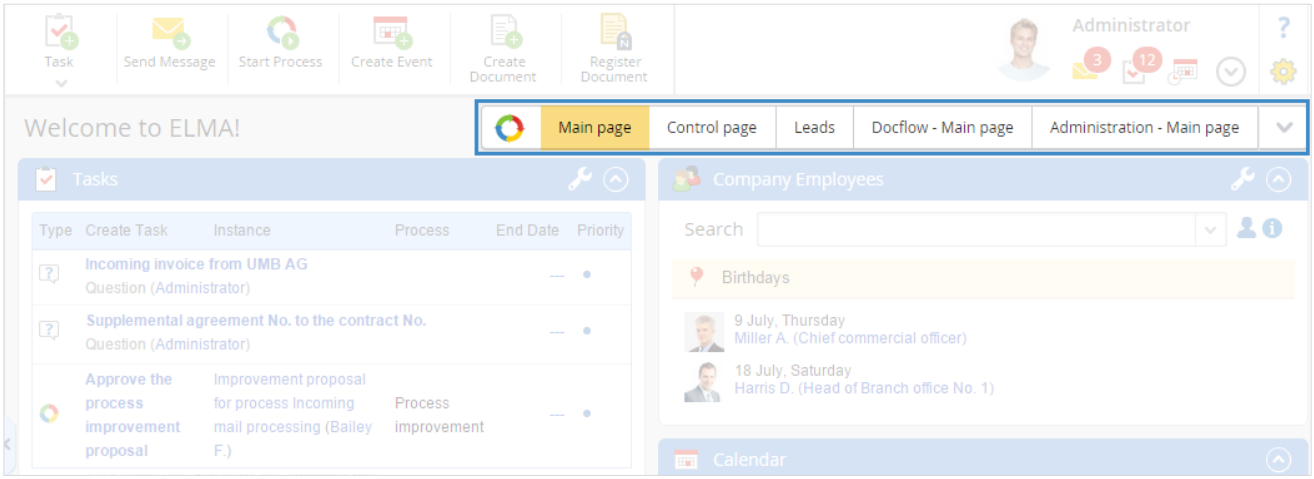


Fig. 220. The set of main pages in ELMA Web Application

To open a page, click on its name. You can customize the set of main pages: change the order of the pages or hide certain pages. Customize a set of main pages for each interface separately. To do this, you can use **Visual Editor** (6.1.1) or go to **Administration** → **Portal Settings** → **Interfaces**.

Customize a set of main pages for the HR Department interface. First, create a new set of main pages (Fig. 218); then select pages and specify the order in which they will be displayed (Fig. 222). In the **Visual Editor**, click the list button next to the set of main pages. Then click the **Configure** link at the bottom of the drop-down list (Fig. 221).

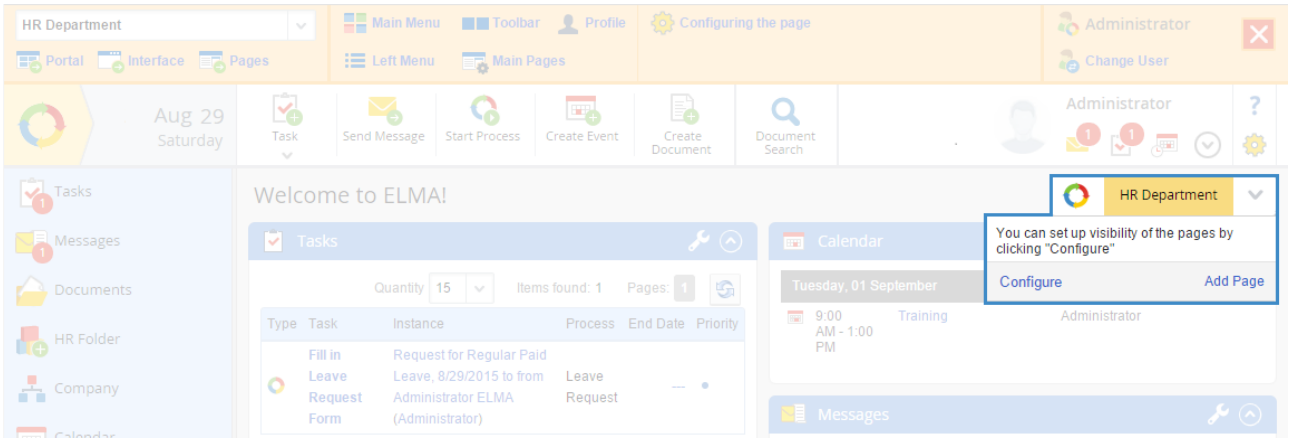


Fig. 221. Click Configure to start configuring the set of main pages

In the window that opens, select pages: drag a required page name from the left side (**Page manager**) to the right (**Selected pages**).

Some pages will appear in the set of main pages, and the other will be hidden in the drop-down list. Specify the number of the displayed pages in the **Number of Displayed Pages** field. To remove the page, click the red cross icon next to the page name. To save the settings, click the **Save** button.

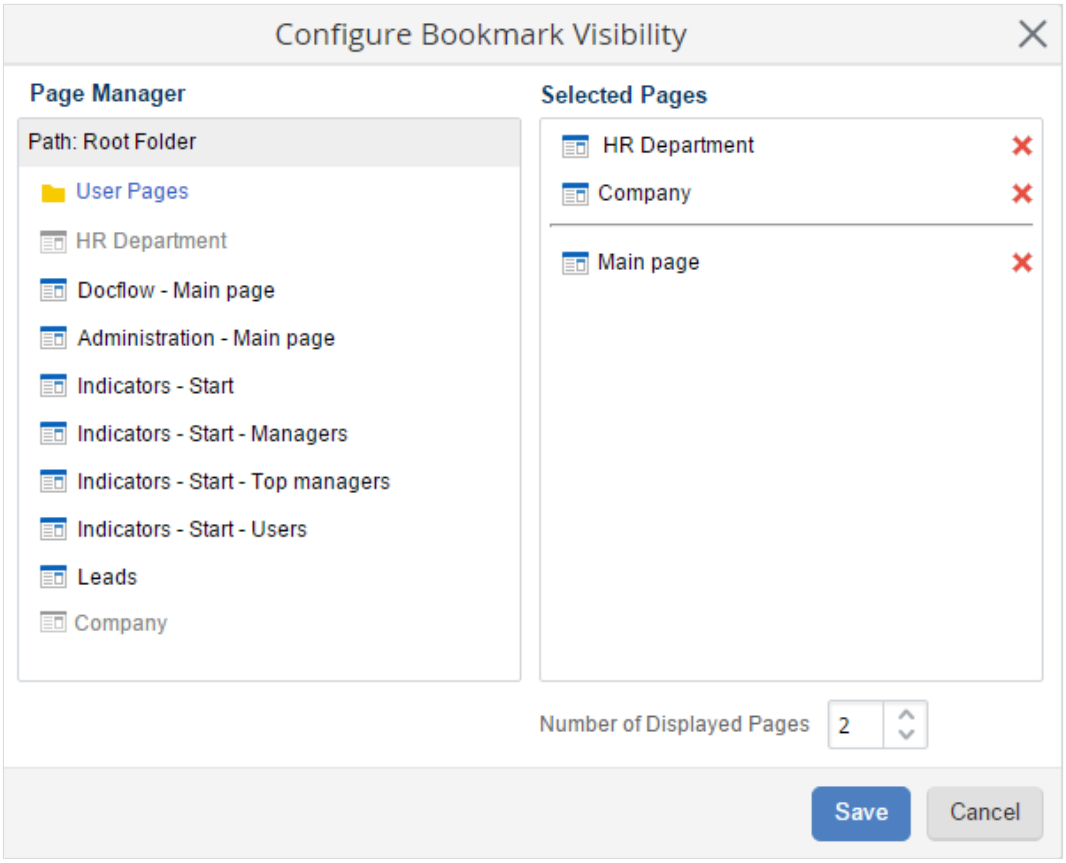


Fig. 222. Configuring the set of main pages

With these settings, the set of main pages will be displayed in **ELMA Web Application** as in Fig. 223 if the user has access to these pages.

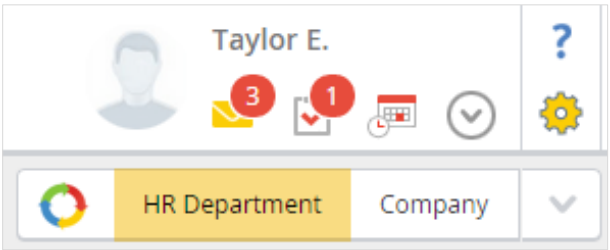


Fig. 223. The set of main pages of the HR Department interface

To view the hidden pages, click the list button (Fig. 224).

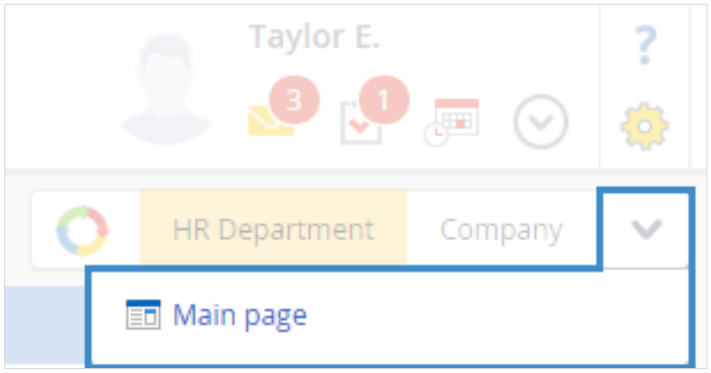


Fig. 224. Clicking the list button to view the hidden pages

6.3 HTML editor

Create content for the HTML portlets and web documents with a special HTML editor.

You can both use tools of a simplified text editor and switch to HTML code window (press <> on the toolbar).

Unlike other HTML editors, the ELMA HTML editor allows you to quickly insert links to the system actions.

Create an HTML portlet with the button that starts the **Leave Request** process. Sign in as Administrator (admin) and enter the page setup mode. Click **Add Portlet,** select an HTML portlet and configure it.

To add a link to an action, click **ELMA** button in the editor top menu and select the **Add Action** item (Fig. 225).

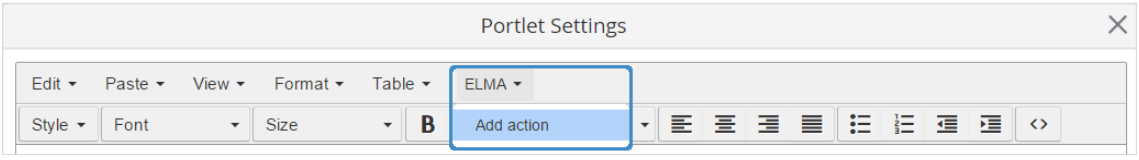


Fig. 225. The HTML editor menu → the ELMA button → the Add Action item

In the next step, you must select an action for the link. The user will click the link and navigate to this action. In the **Select Action** window, you will see the list of the most frequently used actions (Fig. 226). Click **more** to see the full list of available actions.

In the HTML editor menu, select **ELMA → Add Action → Business Process Management → Start Process**.

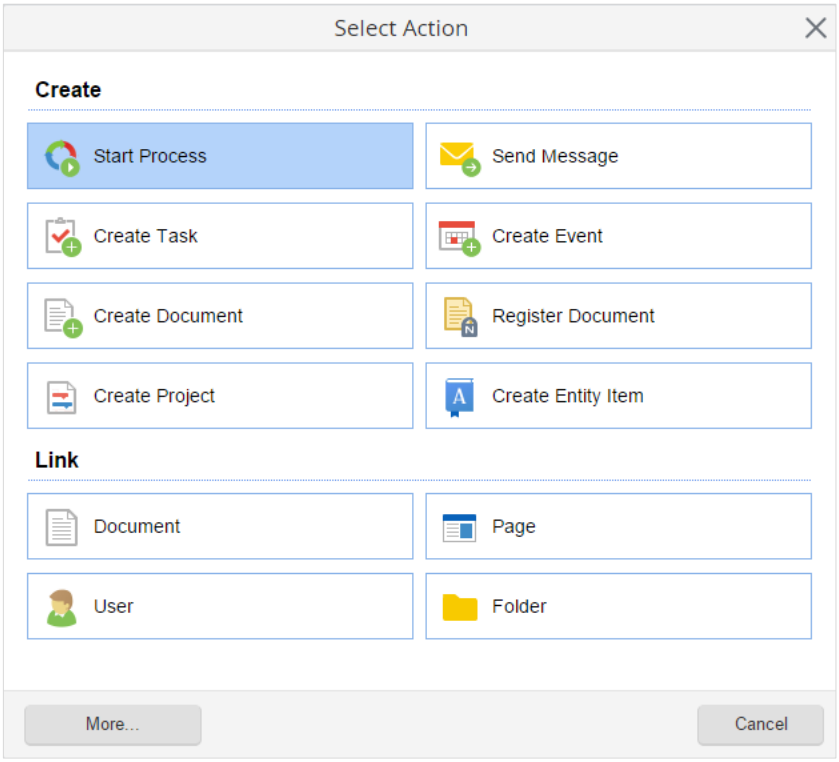


Fig. 226. Selecting an action in the HTML editor

Action settings window opens. In this window, click **Select** and select the Leave Request process; click **Next** (Fig. 227).

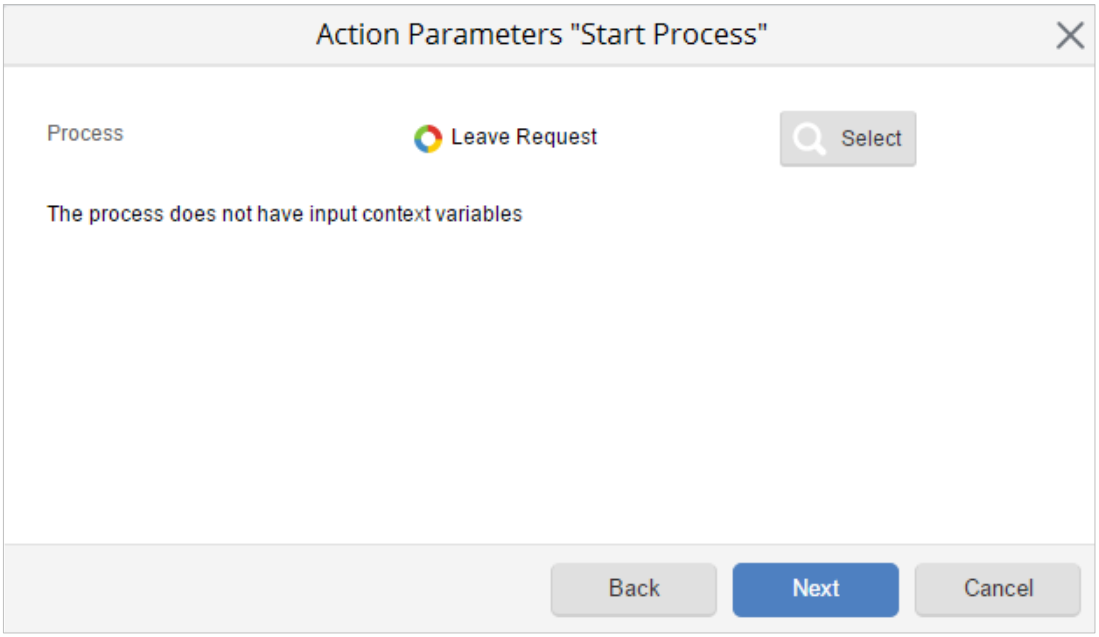


Fig. 227. The Start Process Action Parameters window

In the next step, configure the link display settings (Fig. 228). The display settings window has three sections:

- **Properties** - specify the link name and the link size (for a button).
- **Display settings** - by default displayed as a link. You can choose to display the link as a button of a certain color.
- **Preview** – show how the link will be displayed if you select certain buttons and change the properties.

Configure the settings as follows in Fig. 228:

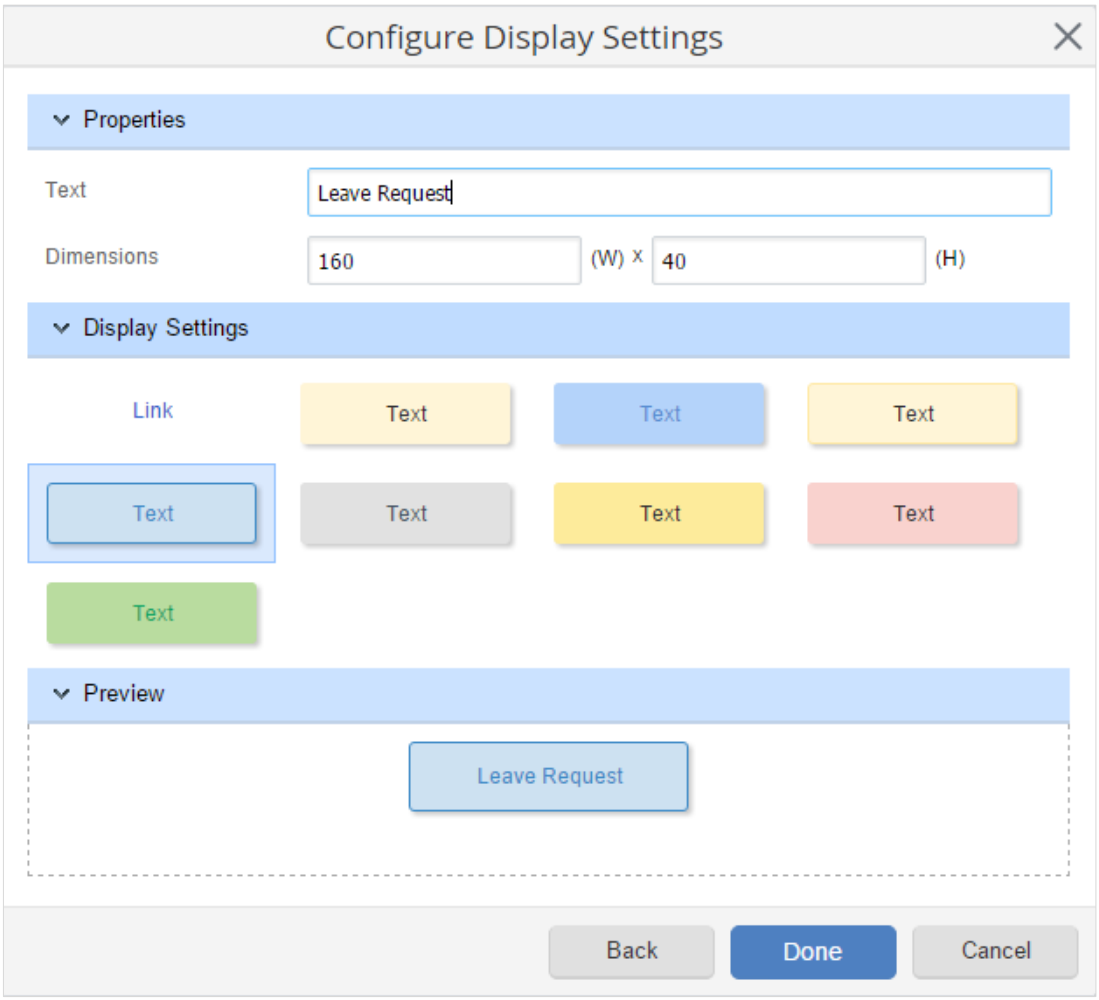


Fig. 228. Configuring the link display in the display settings window

To save the settings, click **Done**. Then, you can continue to configure the portlet in the HTML editor (Fig. 229).

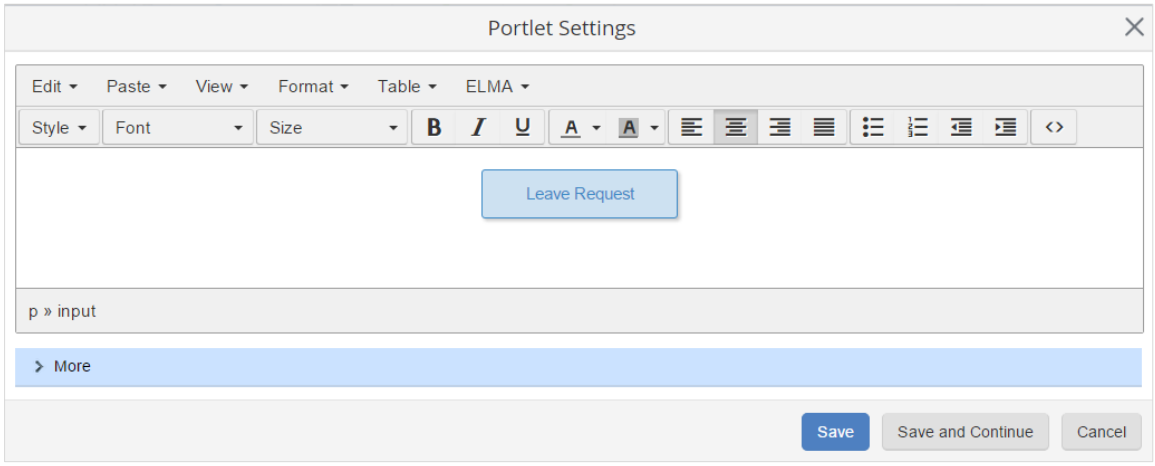


Fig. 229. Configuring the HTML portlet

After you have saved the portlet, in **ELMA Web Application** it will look as follows:

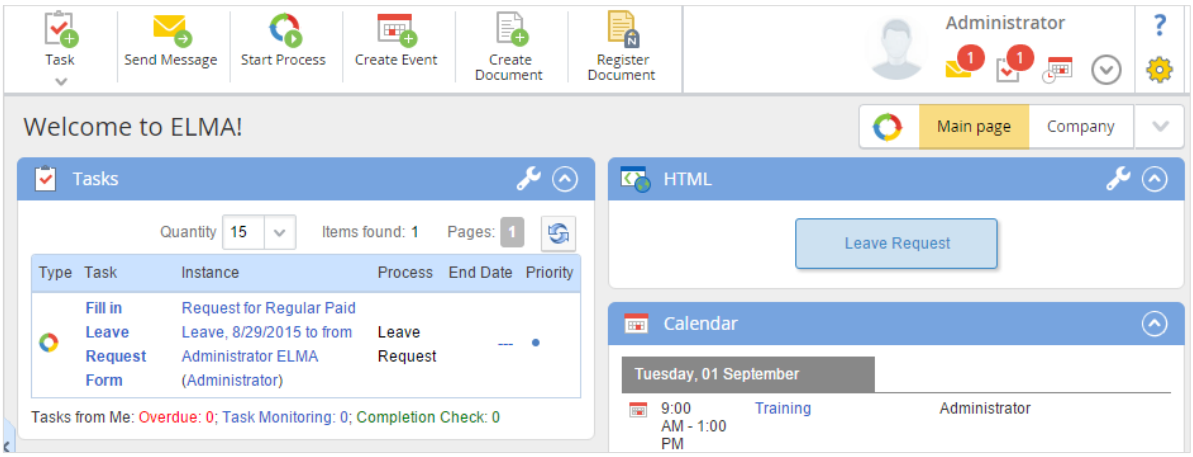


Fig. 230. The HTML portlet with the button for starting the process on the main page

Thus, knowing HTML is not required to create web documents and HTML portlets in **ELMA**. They can contain links to actions (start a process, create tasks, events, documents and messages), system documents, external resources etc. Arrange these portlets and web documents on the portal pages to make **ELMA** even more user-friendly.

Chapter 7. ELMA Agent

ELMA Agent – is an application that sends notifications on system events and provides quick access to documents.

Install **ELMA Agent** on each computer separately after you have installed and started **ELMA server**. It does not require registration.

ELMA Agent promptly sends system alerts to users, so they respond more quickly to events occurring in the system. At the same time, users do not have to spend time, constantly checking the browser for new messages – they do not get distracted and can perform their duties most effectively. Users receive **ELMA Agent** notifications almost instantly. Messages are quite noticeable and users will not miss them.

Download the installation package of **ELMA Agent** from the **User Profile** page of **ELMA Web Application.** Click the respective link (depending on the type of your OS) in the **Download** section (Fig. 231). The installation package of **ELMA Agent** will be downloaded to the current user PC.

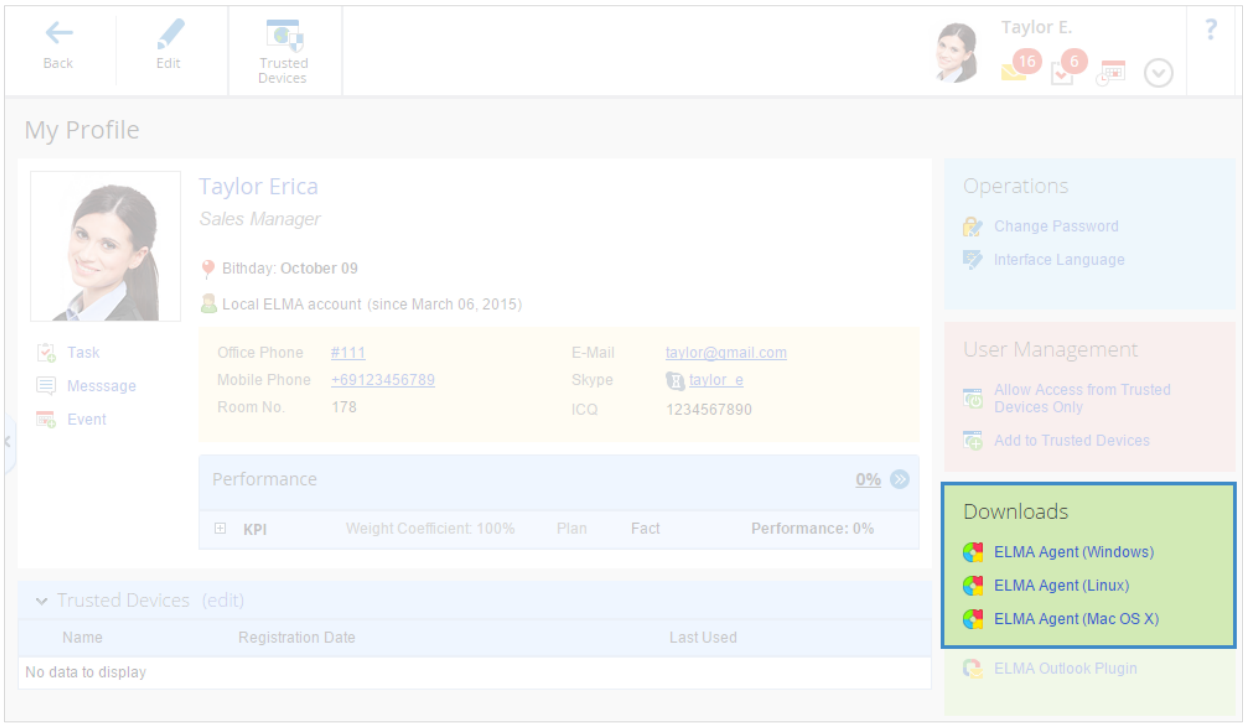


Fig. 231. The user profile. Click the relevant link to download installation file of ELMA Agent

This chapter describes how to install **ELMA Agent** on Windows OS.

To start the installation, run the installation package and follow the on-screen instructions.

Step 1 Starting installation

In this step of Setup Wizard, you can configure the installation settings by clicking the **Configure** button (Fig. 232). A window will open where you can choose the **ELMA Agent** installation directory (Fig. 233).

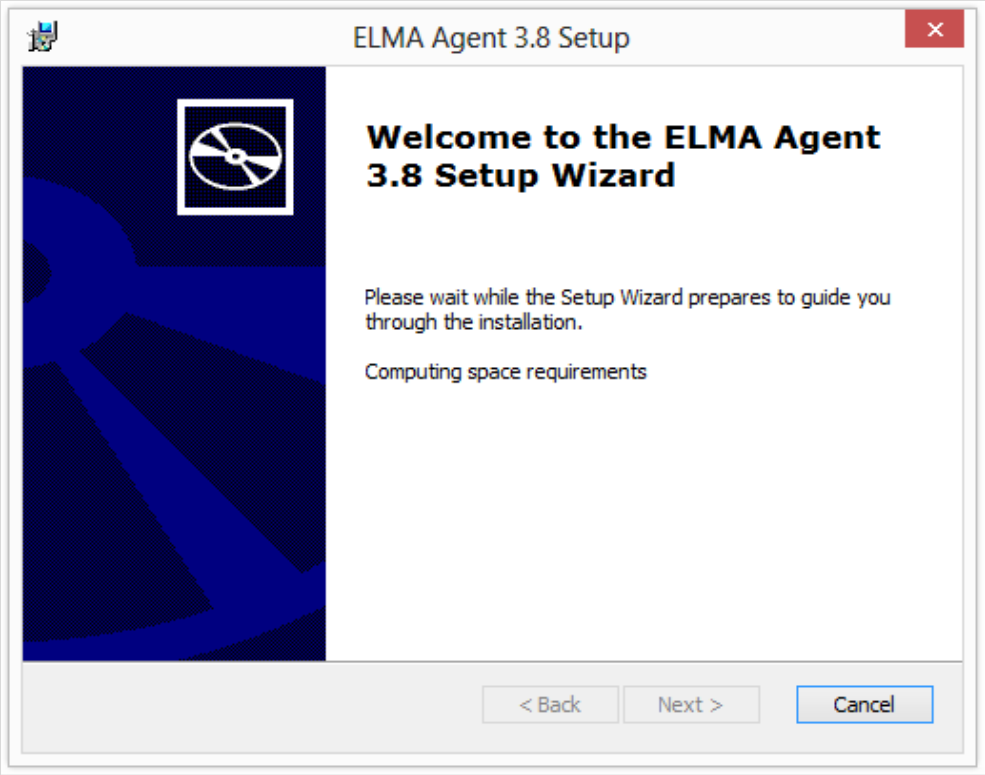


Fig. 232. Installing ELMA Agent. Step 1

Click **Next** to continue installation. Click **Cancel** to close the **ELMA Agent** Setup Wizard.

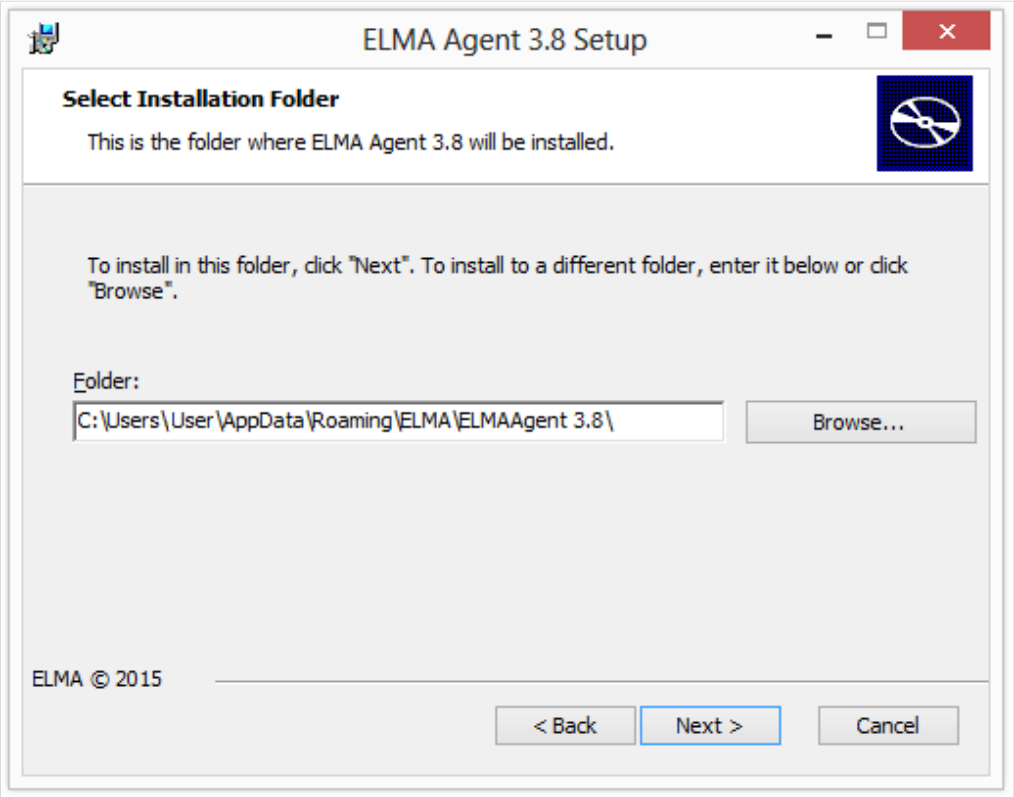


Fig. 233. Configuring installation settings of ELMA Agent

Step 2. Installation

Click **Install** to begin the installation of **ELMA Agent**.

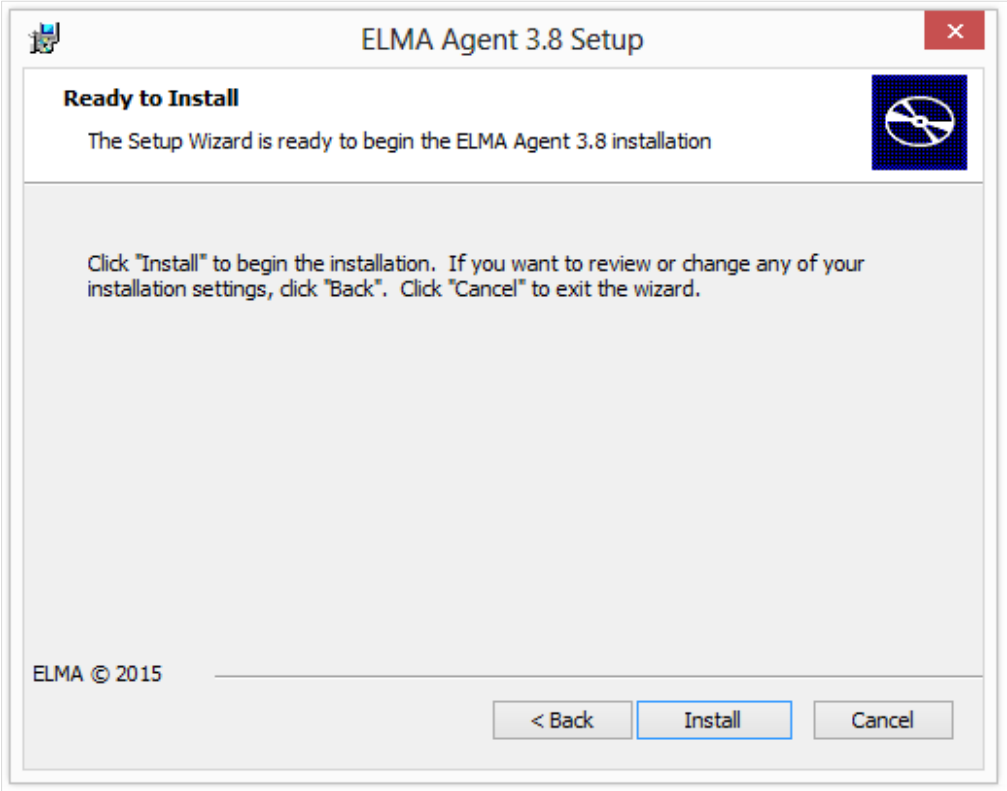


Fig. 234. Confirming ELMA Agent installation

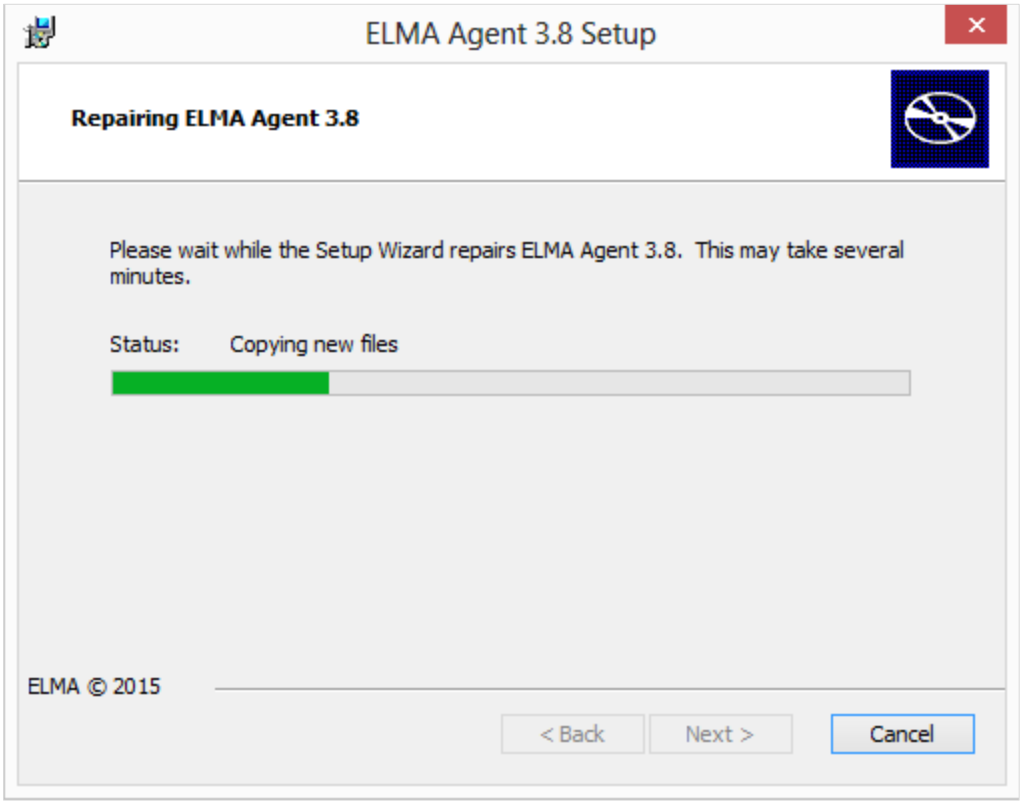


Fig. 235. Installing ELMA Agent

Step 3. Finishing installation

Click the **Finish button** to exit the Setup Wizard when the installation is complete (Fig. 236).

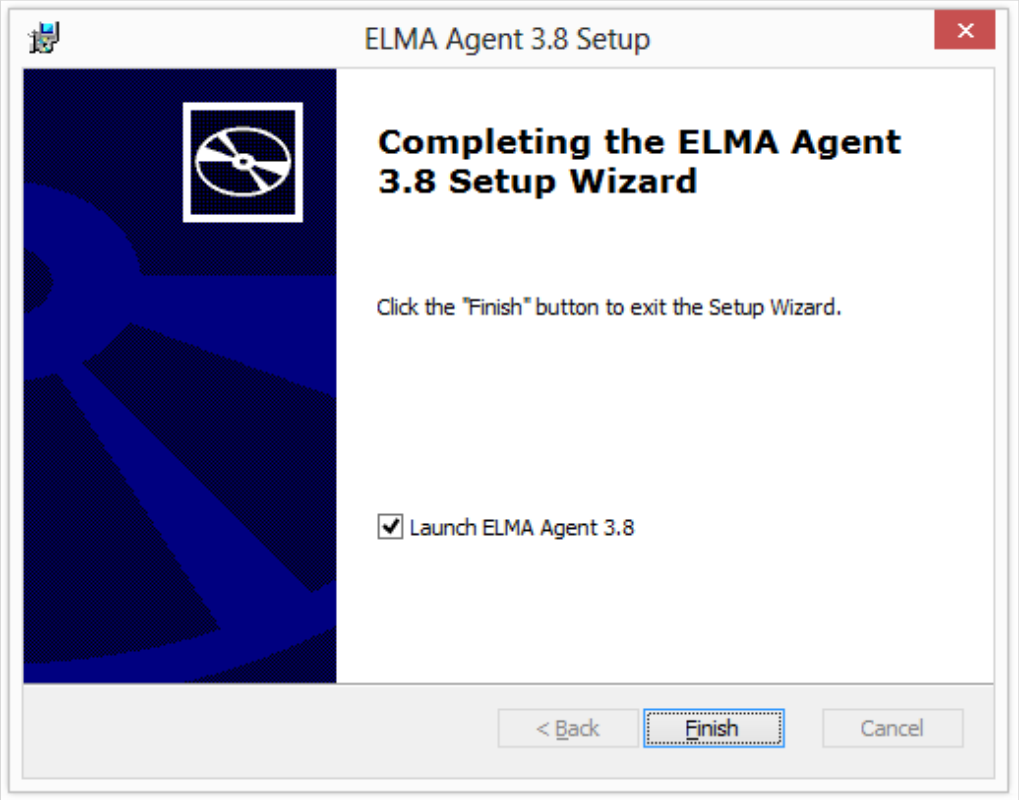


Fig. 236. Finishing ELMA Agent installation

When starting **ELMA Agent** for the first time, you will see the following window (Fig. 237):

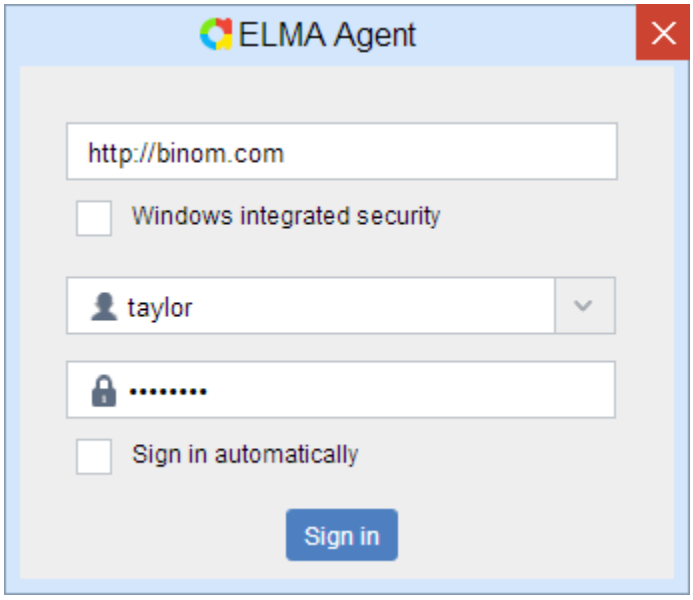


Fig. 237. ELMA Agent startup window

Enter your login, password and the address of **ELMA Server**. You must enter the full address, with a prefix (e.g., http or https). You can select the **Automatic Login** option (the system will save the settings and the next time **ELMA Agent** will start without requesting your user account and password); or select the **Windows Single Sign On** (start **ELMA Agent** as the current Windows user).

Click **Sign In**. **ELMA Agent** will start and connect to **ELMA Server**. It will immediately download all the server messages addressed to you, and you will be able to work with **ELMA** documents through the **Agent**.

When you sing in, a page with **Messages** opens (Fig. 238). When you read the messages in **ELMA Agent**, the system synchronizes data with **ELMA Server,** and marks these messages as **Read** in Web Application. If you have at least one unread message, the **ELMA Agent** icon in the system tray will flash .

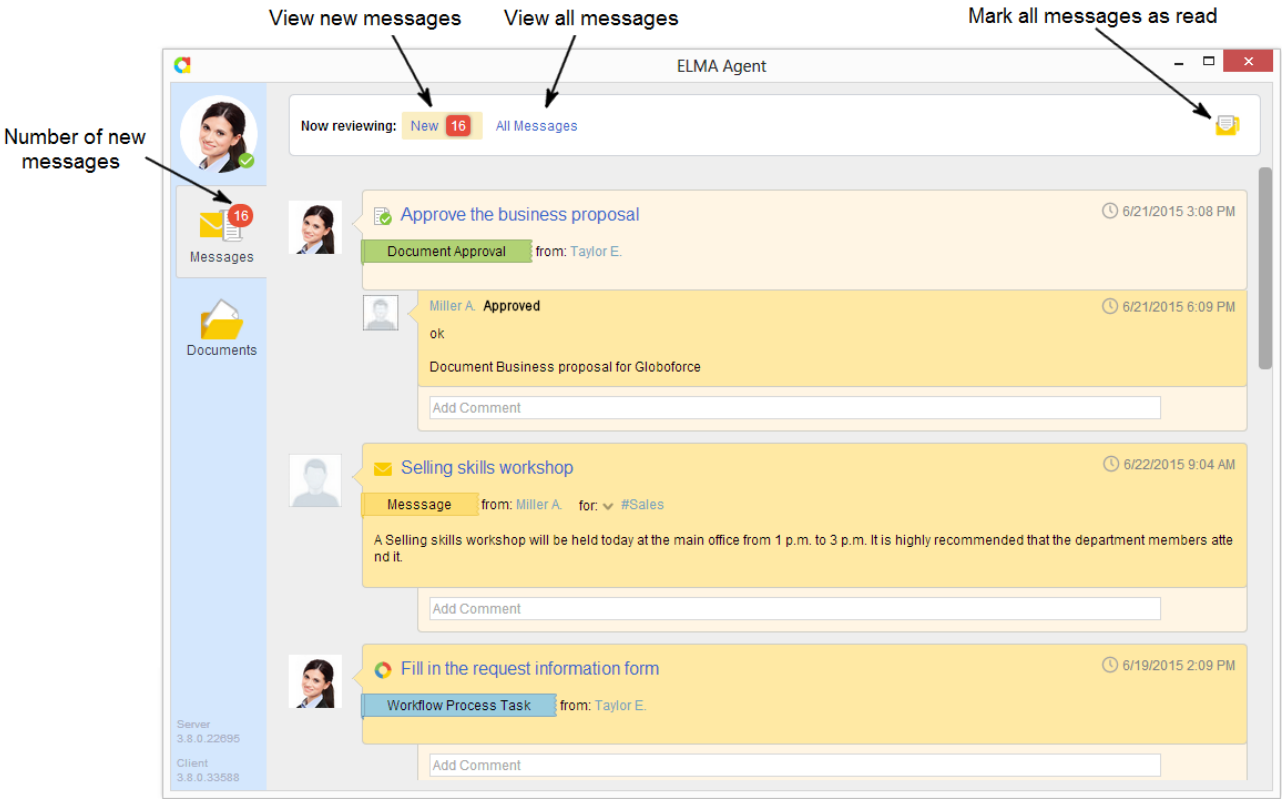


Fig. 238. Message list in ELMA Agent

In **ELMA Agent,** you can use two tabs to work with documents:

- **Documents** tab shows the list of all the documents once opened with **ELMA Agent** (Fig. 239).
- **Active** tab shows the list of all the currently open documents (Fig. 240).

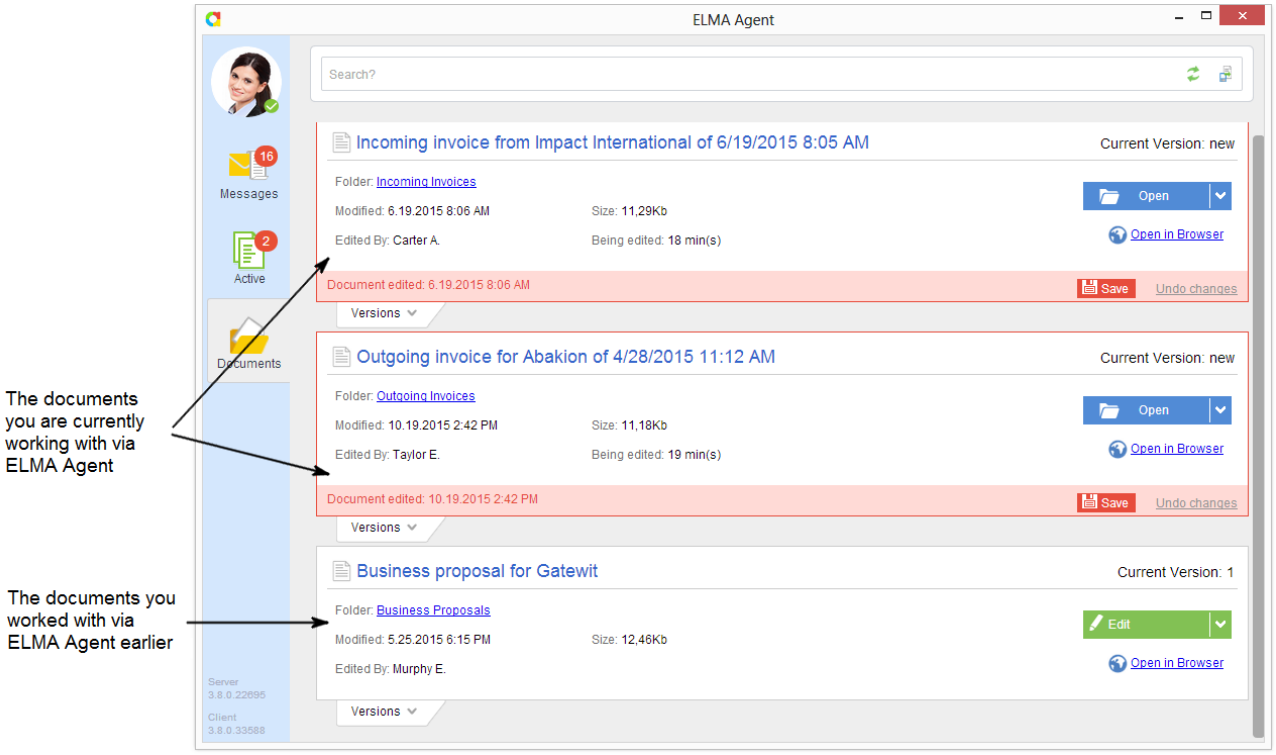


Fig. 239. The Documents tab of ELMA Agent

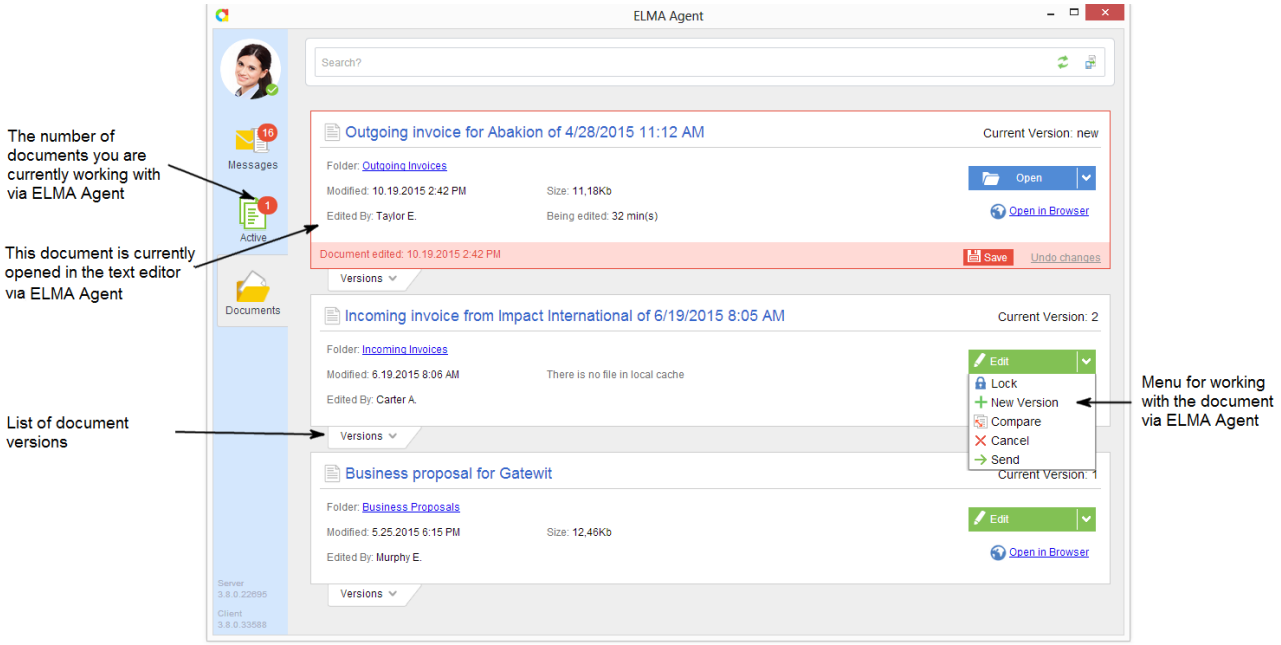


Fig. 240. The Working Documents tab of ELMA Agent

The documents on the tabs are shown in reverse chronological order: the latest open document is displayed at the top and below are the documents you opened earlier.

Configuring ELMA Agent

You can configure **ELMA Agent** settings. To do this, click the **Settings** button in the user profile menu (Fig. 241).

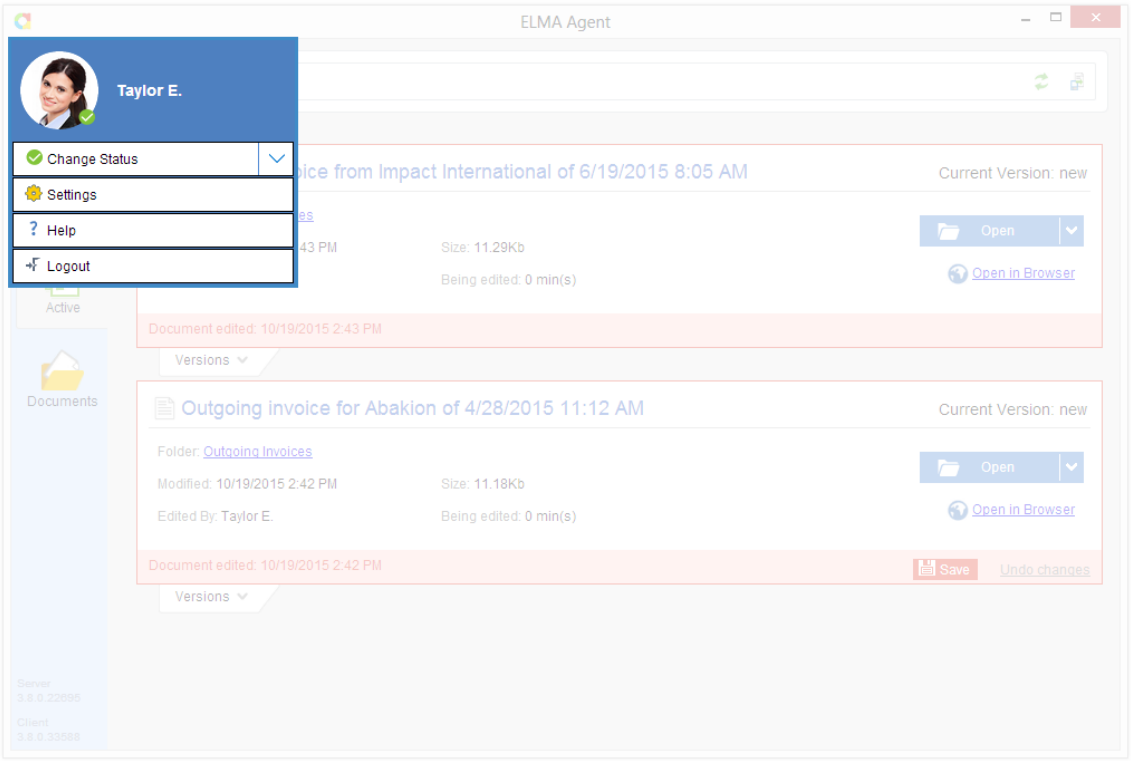


Fig. 241. The Settings button

The **ELMA Agent** setting contain:

- General settings
- Messages settings
- Documents settings
- Extension settings

General Settings

These settings determine how **ELMA Agent** starts, integrates with the Windows menu and connects to the server (Fig. 242).

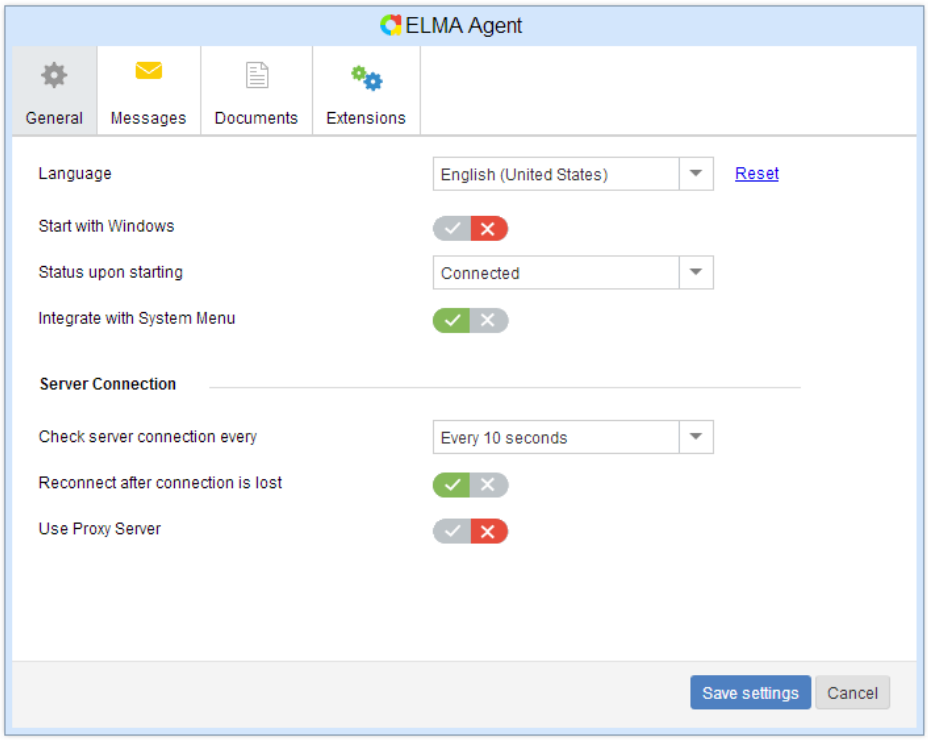


Fig. 242. General settings of ELMA Agent

Messages settings.

In this section, you can specify how you want to receive messages (automatically or after manual synchronization), configure the notifications display time and sound effects (Fig. 243).

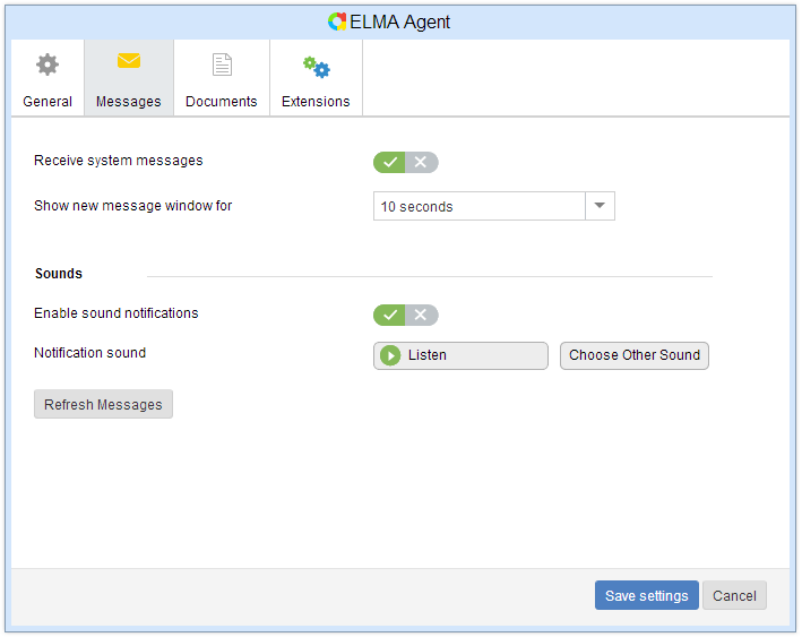


Fig. 243. Messages section settings

Documents settings

Here you can adjust the display settings of documents, configure printer and scanner settings and specify how the changes will be loaded to the server (Fig. 244).

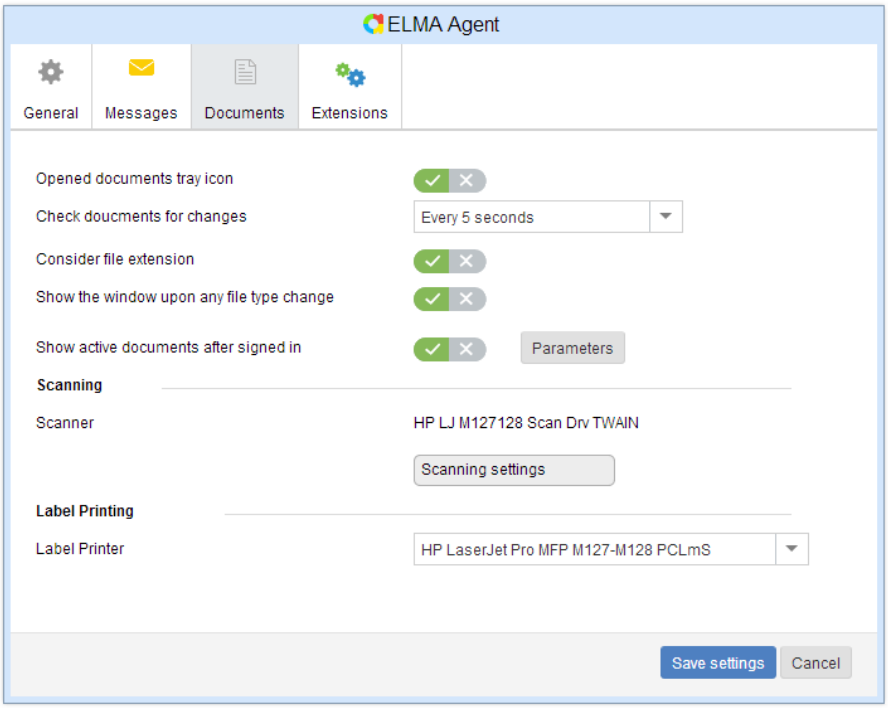


Fig. 244. Documents settings

Extensions settings

You can enable and disable plugins and extensions for **ELMA Agent**. By default, all the plugins and extensions are enabled (Fig. 245).

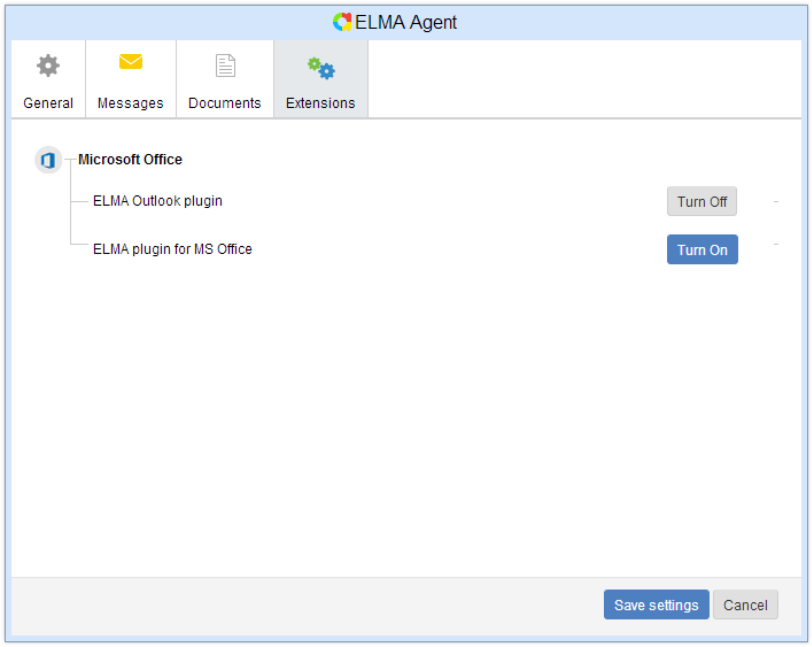


Fig. 245. Expansions settings

To enable an option, click the check mark icon. It will become green. To disable an option, click the cross icon. It will become red.

If you change the settings, be sure to save your changes by clicking the **Save Settings** button.

Chapter 8. Useful references

Along with **ELMA BPM Platform** quick-start manual, the following sources describe the functions of **ELMA** applications

- Quick Start of **ELMA Web Portal**
- Quick Start of **ELMA ECM+**
- Quick Start of **ELMA Projects+**
- Quick Start of **ELMA KPI**

General description and purchase conditions of the applications are available on ELMA website: http://www.elma-bpm.com. You can also **Ask a question** on this website, using a respective link.

An **Online Demo** http://demo.elma-bpm.com demonstrates the main functions and utilization of the applications. If you want to learn more about any of the applications, download a demo with the same settings as in the online version using the same link.

We continuously develop **ELMA** and Platform-based components for coping with more specific tasks. You can find the list of these components and their purchase conditions at **ELMA Store**: http://store.elma-bpm.com/.

If you are experiencing technical difficulties, please visit ELMA technical support website: http://support.elma-bpm.com.

If you need assistance with the system or have questions about partnership with **ELMA** Company, contact us:

- Luxemburg: + (352) 20-30-11-40
  http://www.elma-bpm.com/about-us/