ELMA Projects+ User Manual





Business Process and Performance Management System

Contents

Chapter 1. ELMA Projects+
Chapter 2. Project Management
Chapter 3. Creating a Project9
3.1 Integration with MS Project10
3.2 Project Page
3.3 Project Plan15
3.3.1. Creating a Task17
3.3.2. Stage Task19
3.3.3. Milestone
3.3.4. Creating Links
3.3.5. Gantt Chart
3.3.6. Critical Path29
3.3.7. Project Plan Versioning
3.3.8. Publishing a Plan32
3.4 Publishing a Project
Chapter 4. Monitoring and Controlling Project Progress
4.1 Projects Home Page
4.2 Tasks Control
4.3 Resource Workload Bar Chart
Chapter 5. Completing a Project
Chapter 6. Projects Conveyor
6.1 Configuring the Projects Conveyor44
6.1.1. Configuring Project Type45
6.1.2. Project Roles67
6.1.3. Configuring a Project Type Template69
6.2 Using the Project Conveyor81
6.2.1. Creating a Project81

6.2.2. Managing Schedule	
6.2.3. Planning Resources	90
6.2.4. Changing Life Cycle Stages	
6.2.5. Project Risks	
6.2.6. Project Budget	
Chapter 7. Managing Internal Projects	
Chapter 8. ELMA Projects+ Additional Features	
8.1 Time Report Limit	
8.2 Starting Business Processes on Project Page	
8.3 Approving a Project Plan	
Chapter 9. Useful References	

Introduction

This book is a quick-start manual on **ELMA Projects+**, based on **ELMA BPM Platform**. It is intended for those users who want to master **ELMA BPM** on their own and for those professionals who plan to implement this system.

This book is supposed to introduce the user to some basic functions of project management in **ELMA Projects+.**

This book expects the reader to be familiar with **ELMA** functions described in **ELMA BPM Platform** quick-start manual. **ELMA** is supposed to be configured for working with **ELMA Projects+ Application**: organizational structure and users are set (learn how to do that in **ELMA BPM Platform** quick-start manual).

Below is the full list of **ELMA** quick-start manuals:

- User Manual of **ELMA BPM Platform**
- User Manual of **ELMA Web Portal**
- User Manual of **ELMA ECM+**
- User Manual of **ELMA CRM+**
- User Manual of **ELMA Projects+**
- User Manual of **ELMA KPI**

ELMA Help provides a detailed description of system functions and settings.

This is a tutorial rather than a reference guide and it helps users to fully understand main **ELMA** settings and functions. This book introduces the users to **ELMA** step-by-step.

Chapter 1. ELMA Projects+

ELMA Projects+ provides tools for project progress monitoring, project resource management (human, time, material), establishing communications between team members, etc.

The following three components are most important for projects to progress:

- End product **quality**;
- **Due dates** for all the activities;
- **Project budget**, that is always limited.

When you **manage a project**, you set and achieve specific goals and to do so, you balance the amount of work, resources (such as money, labor, supplies, energy, space, etc.), time, quality and risks.

Generally, project management includes:

- Setting project requirements;
- Setting a specific, achievable goal;
- Balancing contradictory requirements on quality, contents, time and costs;
- Adjusting characteristics, plans and approaches to personal opinions and expectations of team members;
- Monitoring the project progress in accordance with a plan. Adjusting the project progress in accordance with possible deviations.

A project manager is the person responsible for achieving the project objectives; it is important for him to be experienced and skilled. No software can completely replace a good project manager; however, it can help him or her organize a shared information space in order to solve day-to-day tasks (e.g. draw a Gantt chart) and save time for the manager to solve nontrivial tasks.

ELMA Projects+ allows its users to cope with the following tasks:

- Managing project schedule;
- Organizing a shared information space on the project;
- Communication between the team members;
- Managing project budget;
- Informing the team members on the project progress;
- Managing project risks.

Chapter 2. Project Management

Project activities include many aspects, such as planning the project, the budget and the schedule; managing project resources and constraints; quality control, etc. These also apply to portfolio management (managing multiple projects simultaneously).

Companies that do not use project management software usually face following problems:

- The project information is scattered or not taken down at all: for example a project plan can be kept on track in a software; project documents are saved locally without versioning; telephone is used for communication and agreements results are not recorded;
- Project budget is maintained separately and is not attached to the project;
- Versioning of project plan and project budget is not maintained and it is difficult to track changes;
- Control of project progress and project activities schedule is not clearly defined;
- Resource management is not systematic, resource load is not controlled;
- Project management organizations have many similar, same-type projects, and you have to make a plan, a budget, risks, etc. from the ground up every time.

ELMA Projects+ helps solving those and many other problems.

As soon as the application is installed, your company receives a ready-to-use tool to manage project activities. It allows:

- **To create a project schedule**. The system provides you with all the tools you need to manage schedule and project completion rate with project scheduling. ELMA schedule is compatible with MS Project schedule. Learn more about planning projects in **Chapter 3**.
- **To organize a shared information space.** A project manager has all the project management tools in the same place: general project information, project schedule and project tasks, team member notes and task discussions, budget and project risks, project documents, etc.
- **To control project progress**. **ELMA** assigns tasks to the executors, according to the project plan. Project schedule is monitored in real-time mode, and you can see task completion rate in the project plan at any time. Learn more about project progress control and monitoring methods in **Chapter 4**.
- **Communication between project team members.** The system allows you to organize timely information exchange and protect confidential information.
- **To manage project budget. ELMA** allows you to manage project revenues and expenses item-by-item. Each project has its own set of items, positions and planned

values. Real values are accounted according to actual documents. Learn more about budget management in **Chapter 6**.

- **To restrict access to business information. ELMA** allows you to configure access to project information resources (general project information, documents, and budget data). You can grant access to those team members, who need it to carry out their responsibilities on the project.
- **To manage risks.** You can find the list of risks on the project page. You can set priority for each risk to underline its importance. Learn more about risk management in **Chapter 6**.
- **To manage resources.** The system allows you to monitor different types of resources (human, technical, material), plan their usage at different project stages in order to avoid lack or overload of resources. Learn more about resource management in **Chapter 6**.

These functions allow you to solve all the problems, mentioned above.

Think about a project management organization – a construction company. Construction of each object is a separate project. These projects vary greatly by types of construction. At the same time, you can break all the projects down into categories: commercial construction, civil construction, etc. Projects of a particular category have similar properties: project stages, risks, set of documents, etc. Templates help you avoid creating similar elements for every project of the same category.

ELMA takes this idea to the next level: it automatizes the work with typical projects by using business processes and the system unique functions. It is possible with the **Projects Conveyor**: projects conveyor settings are described with an example in **Chapter 6**.

Projects conveyor lowers expenses on typical projects, risks and integration of information and enhances interactions between team members.

Organizations distinct **external projects** (oriented towards external customer) and **internal projects** (oriented towards developments within the organization). With **ELMA**, you can manage external and internal projects in the same system, but by different rules. You can set up display of deadlines, budget and risks management on external projects for the project manager with the projects conveyor (para. **6.1. Configuring the projects conveyor**). Internal projects focus on the project plan execution and resources spent on project realization. Basic principles of projects conveyor setup for internal projects are described in **Chapter 7**.

To begin working with **ELMA Projects+ Application** we will create a project. You can manage untyped projects in the application as soon as it is installed. **Projects conveyor** is described in the following chapters.

Chapter 3. Creating a Project

To create a new project log in to the system as admin. Find and click **Projects** in the left menu – **ELMA Projects+** page opens (fig. 1). Note, that **Projects** section is available by default only to the administrator. Other users must be included to **Team members** groups in order to have access to the section.



Fig. 1. Application page

After you click **Add Project** in the top menu, the project creation page opens. You need to enter the general information about the new project there (fig. 2).

	Administrator ?	
Save Cancel	🐣 💌 😤 💌	
Creating a project		
✓ Project Settings		
Name *	Apartment Building Construction at 253 Hill Street]
Start Date *	06/23/2015	
End Date *	06/23/2015 🗃	
Manager	Administrator ELMA 🗸 🕹	
✓ Calendar		
Calendar	 Business Calendar O General Personal 	

Fig. 2. Project creation page

Enter the name of the project, start and end dates. Leave the other fields unchanged.

If the project plan has already been created in **MS Project** and you need to import it to **ELMA** select **Save and import** button in the top menu (fig. 2).

3.1 Integration with MS Project

After you have selected **Save and import**, project import first step page opens. Click **Load File** button to select an MS Project file with a project plan. After you have selected the file, its name is displayed to the right of the button (fig. 3).



Fig. 3. Project import. Step 1

Click **Next** to continue project import.

The next step displays detailed information on the project import (fig. 4). You can find the tasks list of the MS Project plan in the **Tasks without Executor** tab. If a task executor was added to the **Resources** in MS Project, they will be displayed in the **Executor (MS Project)** column. At this step, you can assign task executors. We will do it later, when editing project plan. Press **Next**.

To Project Back Next					Administrator ?
Import a project - Apartmen	t Building C	Construction	n at	253 Hill Street (Ver	rsion №1) - Step 2
Tasks where executor is not found Resource	e Conflicts Warr	nings Detailed Ir	nformat	ion	
Name	Start Date	End Date	%	Executor (MS Project)	Executor
Prepare building site	10.08.15 8:00	25.08.15 17:00	0	Ward Steven	Ward Steven Select (Manager, Assign to Me)
Perform site engineering work	10.08.15 8:00	17.08.15 9:00	0	Ward Steven	 Ward Steven Select (Manager, Assign to Me)
Install a fence	18.08.15 8:00	21.08.15 9:00	0	Ward Steven	 Ward Steven Select (Manager, Assign to Me)
Lay on-site roads	21.08.15 8:00	26.08.15 9:00	0	Ward Steven	 Ward Steven Select (Manager, Assign to Me)
The site is ready for construction	26.08.15 8:00	26.08.15 8:00	0	Ward Steven	 Ward Steven Select (Manager, Assign to Me)
Perform initial construction work	31.08.15 8:00	18.09.15 17:00	0	James Thomas	 ? No executor
Perform earthwork	31.08.15 8:00	14.09.15 9:00	0	James Thomas	 ? No executor
Perform foundation work and build basement walls	04.09.15 8:00	17.09.15 17:00	0	James Thomas	 ? No executor ♣ Select (Manager, Assign to Me)

Fig. 4. Project import. Step 2

The next step is a plan preview. The plan will be created in **ELMA** (fig. 5).

To Pro	ject Back Save													and and a		Adr	nin 	istra 2	tor	\odot)	
Imp	oort a project - Apartment Buildi	ng Constr	ruction at	253 Hill S	Stre	et	(V	/er	sio	n Nº	1)	- St	ep	3	- F	۲e	vie	w				
Prev	iew an imported project task plan. If you want to change	e something, ret	urn to Step 1 or S	Step 2 to chang	e the	proj	ect i	imp	ort dat	a.												2
+	→ X			*											+	·		×				T
No	Subject	Start Date	End Date	Duration		М	n 03	2 Fe	b 201	5		Mon	09	Feb 3	201	5		Mon	16 Fe	b 201	5	
140.	Q	Start Date	Life Date	Duration		м	т	W	TF	50	s	М	W	Т	F	S	s	М	W	TF	S	2
1	Prepare building site	08/10/2015	08/25/2015	12 day(s)							itart											
1.1	Perform site engineering work	08/10/2015	08/17/2015	6 day(s)																		
1.2	Install a fence	08/18/2015	08/21/2015	4 day(s)																		
1.3	🚖 Lay on-site roads	08/21/2015	08/26/2015	4 day(s)																		
1.4	The site is ready for construction	08/26/2015	08/26/2015	1 Day																		
2	Perform initial construction work	08/31/2015	09/18/2015	15 day(s)																		
2.1	🚖 Perform earthwork	08/31/2015	09/14/2015	11 day(s)																		
2.2	Perform foundation work and build base	09/04/2015	09/17/2015	10 day(s)																		
2.3	🚖 Install slabs	09/17/2015	09/21/2015	3 day(s)																		
2.4	Initial construction work is completed علم	09/21/2015	09/21/2015	1 Day																		
3	${}_{\blacktriangle}$ $\stackrel{\frown}{\exists}$ Perform construction work above ground le	09/22/2015	02/22/2016	110 day(s)																		
3.1	🚊 Build walls and partition	09/22/2015	10/28/2015	27 day(s)																		

Fig. 5. Project import. Step 3

Click **Save** button to complete importing and creating the project. After you have done this, the imported project plan page opens (fig. 6).

1	To Projec	tt Publish Edit Operations						2	Administrator	?
ŀ	Apar	tment Building Construction at	253 Hill S	treet Proje	ect Plan - v	ersion 1				
	You are The pro	viewing a Draft of the project plan: Version 1 ject plan contains unpublished tasksAll changes will	be applied to the	tasks only after	the project plan is	published.				×
	Plan	About the version Versions								
	←	→ X + Q, ⊕, + ⊱: <u>⊪</u>				8				Ψ-
	No.	Subject	Start Date	End Date	Duration	Executor	%	Prior Previous	Mon 02 Feb 2015	Mon 09 M T V
	1	▲ 🚍 Prepare building site	08/10/2015	08/25/2015	12 day(s)	Not defined	0	•	Sta	nt 🔶
:	1.1	Perform site engineering work	08/10/2015	08/17/2015	6 day(s)	Ward S.	0	•		
	1.2	🛋 Install a fence	08/18/2015	08/21/2015	4 day(s)	Ward S.	0	•		
	1.3	🛋 Lay on-site roads	08/21/2015	08/26/2015	4 day(s)	Ward S.	0	•		
	1.4	💤 The site is ready for construction	08/26/2015	08/26/2015	1 Day	Ward S.	0	•		
	2	Perform initial construction work	08/31/2015	09/18/2015	15 day(s)	Not defined	0	•		
	2.1	Perform earthwork	08/31/2015	09/14/2015	11 day(s)	Not defined	0	•		
	2.2	Perform foundation work and build base	09/04/2015	09/17/2015	10 day(s)	Not defined	0	•		
	2.3	🚖 Install slabs	09/17/2015	09/21/2015	3 day(s)	Ward S.	0	•		
	2.4	💤 Initial construction work is completed	09/21/2015	09/21/2015	1 Day	Ward S.	0	•		

Fig. 6. Project plan page

Press **To Project** button to open the project page (fig. 6).

3.2 Project Page

All the important information on the project is displayed on the project page (fig. 7). It is a portlet page, with a set of default project portlets. Each portlet displays current information on a certain subject. These portlets provide you with latest updates, or with detailed information, if you click the project name.

polect - Apartment Building Construction at 253 Hill Street set set versions a daft of the project. To faint the project It must be publicable - choose an appropriate project stage to do that. After the publication, project will become Current an extra version be assigned to security: Trade L Stage Dout Trade L Stage Dout Trade L Stage Dout Trade L Stage Dout Project Bole Project Plan Project Nuktowode 09/10/2015 09/21/2015 Word Stage 0 Project Rusk 0	Dject - Apartment Building Construction at 253 Hill Street setable of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It must be published - choose an appropriate project stage to do that. After the publication, project will become Current an extension of the project It as the project It must be published - choose an appropriate project stage to do that. After the publication, project will be come Current an extension of the project It as	te Task Send Message	Create Cocument	Thange Stage	Operations	G	o to	Administrator 😒 🗾	(
Administrator roject Rale San Date End Date Optication Project Plan Project Nation	tere teretered in a draft of the project. To start the project it must be published - choose an appropriate project stage to do that After the publication, project will become Current and control of the secondary of the seco	ject - Apartment	Building	Construc	tion at 25	3 Hi	ll Str	eet	
General information (*) oped Stage Draft oped Stage Draft oped Chi Date from 6/23/2015 (*) anager Administrator Project Role	General information opict Stage piect End Date from 6/23/2015 anager Administrator Project Role tatakeholders tatakeholders tatakeholders + : upperVisions *: Project Plan Optime Optime Start Date End Date Project Plan Optime Start Date End Date Optime Start Date End Date Optime Start Date End Date Start Date End Date Optime Start Date End Date Start Date End Date Start Date End Date Optime Start Date End Date Start Date End Date Optime Start Date End Date Start Date End Date Start Date End Date Start Date End Date Optime Start Date End Date Optime Start Date End Date Optime Optime Optime Optime Optime Start Date End Date Optime Optime Optime Optime Optime O	are reviewing a draft of the p ect tasks will be assigned to e	roject. To start t executors.	he project it mu	st be published ·	- choos	e an ap	propriate project stage to do that. After the publication, project will become Curren	t and
Troject Stage Draft troject Blan tem 6232015 till 6232015 Mill 6232015 <td>hoject Stage Draft hone 6232015 iiiii 6232015 hone for for for for for for for for for for</td> <td>General information</td> <td></td> <td></td> <td></td> <td></td> <td>\odot</td> <td>🕴 Project Risks</td> <td></td>	hoject Stage Draft hone 6232015 iiiii 6232015 hone for	General information					\odot	🕴 Project Risks	
Project Bale form 623/2015 ↓ III 623/2015 ↓ IIII 623/2015 ↓ III 6	Project Role Manager Administrator Project Role Stakaholders + : Spepvisor + : Project Plan	Project Stage	Draft					No data to display	
Manager Administrator Project Role Stakeholders + : Supervisors + : Project Plan Subject Sant Date End Date Executor End Date Executor Subject Sant Date End Date Executor Subject Sant Date End D	Manager Administrator Project Role Stakeholders + : Stakeholders + : Stakeholders + : Project Plan Imager Imager Project Plan Imager Stat Date Imager Imager Project Plan Imager Imager Project Plan Imager	Project End Date	from 6/2	23/2015 📮 t	ill 6/23/2015 【	9		🗟 My Project Tasks	
Project Role Stakeholders + : Supervisors + : Project Plan	Project Role Stakeholden + : Supervisors + : Subject Project Plan	Manager	Adminis	strator				Type Priority Subject End I	Date
Stakeholders + : Supervisors + : Project Plan Supervisors	Stakeholders + : Supervisors + : Project Plan Subject Stat Date Subject Stat Date Prepare building site 08/10/2015 08/10/2015 08/25/2015 Not defin 0 1 Perform site engine 08/12/2015 08/25/2015 Ward S. 0 1 Derform site engine 08/12/2015 08/25/2015 Ward S. 0 1 Derform fundation 09/21/2015 09/22/2015 09/21/2015 09/21/2015 09/21/2015 09/21/2015 09/21/2015 09/21/2015 1 Derform fundation 09/21/2015 09/21/2015 09/21/2015 <td< td=""><td>Project Role</td><td></td><td></td><td></td><td></td><td></td><td>No data to display</td><td></td></td<>	Project Role						No data to display	
Supervisors Project Plan Subject Subject Subject Star Date End Date Evecutor % Perjoare building site 08/10/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 08/12/2015 09/12/2015 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 01/12/105 <td>Supervisors <tr< td=""><td>Stakeholders +</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<></td>	Supervisors <tr< td=""><td>Stakeholders +</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>	Stakeholders +							
Project Plan Subject Subject Start Date End Date Executor % ************************************	Project Plan Subject Stat Date End Date Executor Perpare building site 08/10/2015 08/25/2015 Not defin 0 Perform site engine 08/10/2015 08/21/2015 Ward S. 0 Perform initial construct 08/21/2015 08/26/2015 Ward S. 0 Perform form initial construct 08/21/2015 09/18/2015 Not defin 0 Perform construction 09/21/2015 09/11/2015 Not defin 0 Perform construction 09/21/2015 09/21/2015 Not defin 0 Perform construction 09/21/2015 09/21/2015 Not defin 0 Perform construction 09/22/2015 02/22/2016 Not defin 0 Perform construction 09/22/2015 02/22/2016 Not defin 0 Perform construction 09/22/2015 02/22/2016 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin 0 Perform construction 09/21/2015 Not defin Not	Supervisors 🕂 :						📑 Project Tasks from Me	
Project Plan Subject Start Date End Date Executor % Perpare building site 08/10/2015 08/25/2015 Not defin 0 Perpare building site 08/10/2015 08/25/2015 Not defin 0 Install a fence 08/10/2015 08/25/2015 Ward S. 0 Deform site engine 08/26/2015 09/26/2015 Ward S. 0 Perform initial construct 08/26/2015 09/26/2015 Not defin 0 Perform foundation 09/21/2015 Ward S. 0 0 Install alsb 09/11/2015 Not defin 0 0 Perform foundation 09/21/2015 Ward S. 0 0 Perform construction 09/21/2015 Ward S. 0 0 Project Messages O Install alsb 09/11/2015 09/21/2015 Ward S. 0 Add Message Not messages to display Project Messages Project Message Project Documents	Project Plan Subject Start Date End Date Executor Perpare building site 08/10/2015 08/25/2015 Not defin 0 Install a fence 08/26/2015 09/26/2015 09/26/2015 09/26/2015 09/26/2015 09/26/2015 09/26/2015 09/26/2015 09/26/2015 09/21/2015 09							Tasks from Me: Active: 0; Overdue: 0	
Subject Start Date End Date Executor %	Subject Start Date End Date Executor %	Project Plan					\odot	Today (0)	
Image: Control of the second of the secon	Q. Note Note Note Note Image: Prepare building site 08/10/2015 08/25/2015 Not defin 0 Image: Prepare building site 08/10/2015 08/17/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/25/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/25/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Preform initial construct 08/31/2015 09/18/2015 Not defin 0 Image: Preform foundation 09/17/2015 09/21/2015 Ward S. 0 Imatell slabs 09/21/2015 09/21/2015 Ward S. 0 Image: Preform construction 09/21/2015 02/22/2016 V Project Messages Image: Preform construction 09/22/2015 V Not messages to display Image: Prefore construction 09/21/2015 <td>Subject</td> <td>Start Date</td> <td>End Date</td> <td>Executor</td> <td>%</td> <td></td> <td>No data to display</td> <td></td>	Subject	Start Date	End Date	Executor	%		No data to display	
Prepare building site 09/10/2015 00/25/2015 Word defin 0 Image: Perform site engine 08/10/2015 08/17/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/21/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/26/2015 08/26/2015 Ward S. 0 Image: Install construct 08/31/2015 09/18/2015 Not defin 0 Image: Perform initial construct 08/31/2015 09/14/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/17/2015 Not defin 0 Image: Perform foundation 09/21/2015 Ward S. 0 0 Image: Perform construction 09/21/2015 Ward S. 0 0 Image: Perform construction 09/21/2015 Ward S. 0 0 Image: Perform construction 09/21/2015 Ward S. 0 0 Project Message Image: Perform construction 09/21/201	Prepare building site 09/10/2015 00/25/2015 Not defin 0 Image: Perform site engine 08/10/2015 08/17/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/26/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/31/2015 08/26/2015 Ward S. 0 Image: Perform initial construct 08/31/2015 09/14/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/17/2015 Not defin 0 Image: Perform foundation 09/21/2015 09/21/2015 Ward S. 0 Image: Perform construction 09/21/2015 09/21/2015 Ward S. 0 Image: Perform construction 09/21/2015 09/21/2015 Ward S. 0 Project Messages Image: Perform construction 09/21/2015 02/22/2016 Image: Perform construction 09/21/2015 Add Message Project Documents Image: Perform constructio		00/10/2015	00/05/0045					
Image: Set of the state of	Install a fence 08/10/2013 00/17/2013 Ward S. 0 Install a fence 08/18/2015 08/21/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/21/2015 Ward S. 0 Image: Install a fence 08/18/2015 08/21/2015 Ward S. 0 Image: Install a fence 08/11/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/11/2015 08/26/2015 Ward S. 0 Image: Install a fence 08/11/2015 09/18/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/11/2015 Not defin 0 Image: Install alabs 09/17/2015 09/21/2015 Ward S. 0 Image: Install alabs 09/17/2015 09/21/2015 Ward S. 0 Image: Install alabs 09/17/2015 09/21/2015 Ward S. 0 Image: Install alabs 09/12/2015 02/22/2016 Not defin 0 Image: Install alabs 09/12/2015 02/22/2016 Not defin 0 Image: Install alabs 09/21/2015 02/22/2016	Prepare building site	08/10/2015	08/25/2015	Not defin	0	Î		
industry of the set of a construction in the set of a construction is the set of a construction in the set of a constructin the set of a construction in the set of a construction in the s	industry of other 00/12/2015 00/12/2015 00/12/2015 00/12/2015 iiii Lay on-site roads 08/21/2015 08/26/2015 Ward S. 0 jiiii Perform initial construct 08/31/2015 09/18/2015 Not defin 0 iiiiii Perform earthwork 08/31/2015 09/14/2015 Not defin 0 iiiiiii construct 09/04/2015 09/14/2015 Not defin 0 iiiiii construction 09/04/2015 09/21/2015 Ward S. 0 jiiiiii construction 09/21/2015 Ward S. 0 iiiiii construction 09/21/2015 09/21/2015 Ward S. 0 iiiiii construction 09/21/2015 09/21/2015 Ward S. 0 iiiiii construction 09/21/2015 02/22/2016 Not defin 0 iiiiiii construction 09/21/2015 02/22/2016 Not defin 0 Add Message No No Iiiiiiii Iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	Tinstall a fence	08/18/2015	08/21/2015	Ward S	0			
Image: Second	Image: Series of the state is ready for 00/21/2015 00/26/2015 00/26/2015 00/26/2015 Image: Perform initial construct 08/31/2015 09/18/2015 Not defin 0 Image: Perform earthwork 08/31/2015 09/14/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/14/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/21/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/21/2015 Ward S. 0 Image: Perform construction 09/21/2015 09/21/2015 Ward S. 0 Image: Perform construction 09/21/2015 09/21/2015 Ward S. 0 Image: Perform construction 09/21/2015 02/22/2016 Not defin 0 Image: Perform construction 09/21/2015 02/22/2016 Not defin 0 Add Message Not Not Image: Perform construction Project Documents		08/21/2015	08/26/2015	Ward S	0			
Perform initial construct 08/31/2015 09/18/2015 Not defin 0 Perform earthwork 08/31/2015 09/14/2015 Not defin 0 Perform foundation 09/14/2015 Not defin 0 Image: statistic construction 09/12/2015 Not defin 0 Image: statistic construction 09/21/2015 Ward S. 0 Image: perform construction 09/21/2015 Ward S. 0 Perform construction 09/21/2015 Ward S. 0 Perform construction 09/21/2015 Ward S. 0 Project Messages Add Message No messages to display	• Perform initial construct	The site is ready for	08/26/2015	08/26/2015	Ward S.	0			
Perform earthwork 08/31/2015 09/14/2015 Not defin 0 Perform foundation 09/04/2015 09/17/2015 Not defin 0 Install slabs 09/04/2015 09/17/2015 Not defin 0 0 Install slabs 09/17/2015 09/21/2015 Ward S. 0 0 Project Messages Install slabs 09/22/2015 02/22/2016 Not defin 0 Add Message Nomessages to display Image: Comparison of the stage o	Image: Perform carthwork 08/31/2015 09/14/2015 Not defin 0 Image: Perform foundation 09/04/2015 09/17/2015 Not defin 0 Image:	Perform initial construc	08/31/2015	09/18/2015	Not defin	0			
Perform foundation 09/04/2015 09/17/2015 Not defin 0 Install slabs 09/17/2015 09/21/2015 Ward S. 0 L Initial construction 09/21/2015 Ward S. 0 Perform construction 09/22/2015 02/22/2016 Not defin 0 Project Messages Image: Comparison of the start of the sta	Perform foundation 09/04/2015 09/17/2015 Not defin 0 Install slabs 09/17/2015 09/21/2015 Ward S. 0 ↓ Initial construction 09/21/2015 09/21/2015 Ward S. 0 ● ↓ Perform construction 09/22/2015 02/22/2/15 Ward S. 0 ● ↓ Project Messages ● ● ● ● ▲ Add Message ● ● ● ● No messages to display ● ● ● ●	Perform earthwork	08/31/2015	09/14/2015	Not defin	0			
Install slabs 09/17/2015 09/21/2015 Ward S. 0	Install slabs 09/17/2015 09/21/2015 Ward S. 0 ↓ Litital construction 09/21/2015 09/21/2015 Ward S. 0 ▲ Perform construction 09/22/2015 02/22/2016 Not defin 0 ▲ Add Messages Image: Construction Const	Perform foundation	09/04/2015	09/17/2015	Not defin	0			
	↓ Initial construction 09/21/2015 09/21/2015 0 ▲ Perform construction 09/22/2015 02/22/2016 Not defin 0 ▲ Project Messages	a Install slabs	09/17/2015	09/21/2015	Ward S.	0			
	Perform construction 09/22/2015 02/22/2016 Not defin 0 Project Messages Add Message No messages to display Project Documents ©	Initial construction	09/21/2015	09/21/2015	Ward S.	0			
Project Messages Add Message No messages to display Project Documents	Project Messages Add Message No messages to display Project Documents	Perform construction	09/22/2015	02/22/2016	Not defin	0	-		
Add Message No messages to display Project Documents	Add Message No messages to display Project Documents	Project Messages					\odot		
No messages to display	No messages to display Project Documents	Add Message							
Project Documents	Project Documents	No messages to display							
Project Documents	Project Documents								
		Project Documents				ىكر	\bigcirc		
You can create a document of the File type by dragging files from File Explorer to this page. These files will be automatically uploaded to the server and attached to the documents you create.		Quantity 15	i v Item	ns found: 1 F	Pages: 1	à 🚳	\$		
You can create a document of the File type by dragging files from File Explorer to this page. These files will be automatically uploaded to the server and attached to the documents you create.	Ouantity 15 🗸 Items found: 1 Pages: 1 🧐 🏹 🏟	Name	Author		Created Or	ı			
You can create a document of the File type by dragging files from File Explorer to this page. These files will be automatically uploaded to the server and attached to the documents you create. Quantity 15 Items found: 1 Pages: 1 Image: 1 </td <td>Quantity 15 V Items found: 1 Pages: 1 Image: 1 Name Author Created On</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Quantity 15 V Items found: 1 Pages: 1 Image: 1 Name Author Created On								

Fig. 7. Project page

The project page also provides you with other project management tools, which will be described later.

You can change the set of portlets, their position and settings. Learn more about portlets and pages in **ELMA BPM Platform** quick-start manual.

3.3 Project Plan

A **Project plan** is a totality of project tasks and a scheduled project plan. A project plan includes duration, executors, resources, etc. on every task.

Click **Project plan** on the project page to open the project plan page (fig.7).

The tasks list is to the left of the page and the Gantt chart is to the right (fig.8).

To Proj	ject Publish Edit Operations														Ad	min	iist Ç	rato	r	0)	?	
Apartment Building Construction at 253 Hill Street Project Plan - version 1																							
You a The p	re viewing a Draft of the project plan: version 1 roject plan contains unpublished tasks. All changes will	be applied to the	e tasks only afte	r the projec	t plan i	is put	olished	I.														×	(
Plan	About the version Versions																						
+	→ X ◆ Q @ + 5-3 <u>h</u>						•														Ŧ	÷	
No.	Subject	Start Date	End Date	ul 2015	1	Mon 2	27 Jul	2015	<i>c c</i>	Mo	n 0	3 Au	g 20	15		Mo	on 1	LO AL	ıg 2	015	_	1	,
1	Q	08/05/2015	08/06/2015	1 F 5			vv	F	5 5	M		w			5	м	<u> </u>	vv	<u> </u>	-	> :	> •	
2	Hold a meeting on the project midation	08/07/2015	08/11/2015	Hold	a meet	ang a	on the	proje	et initia	tion	oto	L											
2		00/07/2015	00/11/2015		1	Appro	ove the	e proj		ume	fild	LION		•				1					
2.1		00/07/2013	00/07/2015				OD	tain c			pe	mit				P		1				E	
2.2	Approve consultation documentation	08/12/2015	08/25/2015				Ap	prov				aocu		catio									
3		08/12/2015	08/25/2015									Pre	pare			site	3	1	_			1	
3.1		08/12/2015	08/19/2015							Perf	orm	site	engi	nee	ring	vork	1			-			
3.2	Install a fence	08/20/2015	08/25/2015																				
3.3	🛋 Lay on-site roads	08/20/2015	08/25/2015																	Lay		si	
			•	4																	•		1

Fig. 8. Project plan page

Click **To Project** button in the top menu to go back to the project page. Click **Edit** button in the top menu to edit the project plan, imported from MS Project. Project plan editing page opens (fig. 9).

То	P rojec	t Publish Save Cancel						Adm	inistrator	?
E	dit a	project plan: "Apartment Build	ling Const	truction a	t 253 Hi	ll Sti	reet", version 1			
P	lan	More	-							
	(•	→ X ◆ Q ⊕ ⊕ 5=3 <u>III</u>						+• /	X 8 8 Y	•
	No.	Subject	Start Date	End Date	27 Jul 2015	c c	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 2015	; c
		Q	00/05/2015	00/06/2015	WIF	5 5			S M I W I F	2
	L	Hold a meeting on the project initiation	08/05/2015	08/06/2015	on the proje		tion			
	2	Prepare building site	08/10/2015	08/26/2015			Prepare building site			
1	2.1	Perform site engineering work	08/10/2015	08/17/2015			n site engineering work			
	2.2	🚖 Install a fence	08/18/2015	08/21/2015				Install a fe	nce	
1	2.3	🚊 Lay on-site roads	08/21/2015	08/26/2015					y on-site roads	
1	2.4	The site is ready for construction	08/26/2015	08/26/2015					he site is ready for cor	กร
	3	a 🚖 Perform initial construction work	08/31/2015	09/21/2015					Perf	fc
	8.1	🚊 Perform earthwork	08/31/2015	09/14/2015						
3	3.2	🚖 Perform foundation work and build base	09/04/2015	09/17/2015					Perform	
	3.3	🚖 Install slabs	09/17/2015	09/21/2015						
3	3.4	Initial construction work is completed للم	09/21/2015	09/21/2015						
4	1	▲ □ Perform construction work above ground le	09/22/2015	02/22/2016						-
				÷.	4			_	Þ	•

Fig. 9. Project plan editing page

Learn more about project plan editing in the following paragraphs.

3.3.1. Creating a Task

Click **plus icon** in the **toolbar** and select **Project Task** to add a new task to the project plan (fig. 10).

Т	Projec	t Publish Save Cancel					Con los		Admini	istrator	?
E	dit a	project plan: "Apartment Build	ding Cons	truction a	at 253 Hill Street	", version 1					
	Plan	More									
	÷ -	• X • Q • + 53 <u>h</u>			8			÷	1.3	x e e	Υ.
	No.	Subject	Start Date	End Date	Mon 03 Aug 2015	Mon 10 Aug 2015	Mo		Project Ta	sk	Aug 201
	1	Hold a meeting on the project initiation	08/05/2015	08/06/2015					Milestone Start Busin	ess Process	
		a 🚉 Prepare building site				_					4
		🚖 Perform site engineering work		08/17/2015							
		🚊 Install a fence									
		🚊 Lay on-site roads									
	2.4	${\cal J}$ The site is ready for construction									

Fig. 10. Adding a project task

You have to enter subject, description, start date and duration in the task creation window (fig. 11). Select **Manager** in the **Executor** field (the manager was assigned at the project creation stage, fig. 2). Click **Create** to add the task to the list of project plan tasks; the task will appear the last in the list.

Move the task in the list, so that its position corresponded logically with the other tasks. It will improve readability. Mouse over the task name, press and hold the left mouse button. Move the cursor to the desired position in the tasks list. A green line will highlight the new position (fig. 12).

	Create a project task	\times
Control Co-Executors T	ime Report Limit Attachments Resources	
Subject *	Approve the project documentation	
Executor	 No executor Select (Manager, Assign to Me) 	- 1
Start Date	08/03/2015	- 1
Specify Duration		
Duration *	3 day(s)	
Completion Rating	0	
Priority *	Regular	- 1
Category	~ Q +	- 1
Description	Approve a set of documents required to start construction work	
	Create	Cancel

Fig. 11. Task creation window

Ec	lit a	project plan: "Apartment Build	ling Const	ruction a	t 253 Hill Street	", version 1				
PI	an	More								
		→ X ◆ Q ⊕ ⊕ ≔ <u>III</u>			*		+ / ×	Ξ	Ľ	T -
N	lo	Subject	Start Date	End Date	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 2015	5	Mon 2	4 Aug 1
		Q,	Start Date	End Date	MTWTFSS	MTWTFSS	MTWTF	S S	МТ	WT
1		🚖 Hold a meeting on the project initiation	08/05/2015	08/06/2015	tion					A
2		▲ 🖹 Prepare building site	08/10/2015	08/26/2015	Prepare building site	· · · · · · · · · · · · · · · · · · ·				
2	.1	Perform site engineerin	08/10/2015	08/17/2015	site engineering work					
2	.2	🚖 Install a fence	08/18/2015	08/21/2015		Install a fence	2			
2	.3	🚖 Lay on-site roads	08/21/2015	08/26/2015			n-site roads			
2	.4	The site is ready for construction سلِّم	08/26/2015	08/26/2015			site is ready for co		ion	•
3		Approve the project documentation	08/06/2015	08/10/2015	entation					
4		⊿ 🚖 Perform initial construction work	08/31/2015	09/21/2015			Per		itial cor	nstru
4	.1	🚖 Perform earthwork	08/31/2015	09/14/2015					Per	form

Fig. 12. Moving a task in the list

3.3.2. Stage Task

A **Stage task** is a parent task without an executor. It groups **sub-tasks**. A stage task is completed only if all of its sub-tasks are completed.

Create a sub-task. Click the right mouse button on the task we created earlier, select **Add** \rightarrow **Sub-Task** (fig. 13). Creating a sub-task is mush as creating a project task (para. 3.3.1. Creating a Task).

E	dit a	a project plan: "Apartment Bu	ilding Const	ruction	at 253 Hill Street	", version 1		
1	Plan	More						
	(→ X ◆ ⊖, ⊕, ⊕ ⊱=: <u>III</u>			8		+• / × ∈	Ξ.Υ.
	Na	Subject	Chart Data	Fuel Data	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 2015	Mon 24 Aug :
	NO.	Q	Start Date	End Date	MTWTFSS	MTWTFSSM	M T W T F S S	м т w т
	1	$[\hat{\textbf{a}}]$ Hold a meeting on the project initiation	08/05/2015	08/06/2015	tion			^
	2	Approve the project documentation	Add	00/10/2015				
	3	⊿ 🚔 Prepare building site	Add	P	Project Task	-	_	
	3.1	🚖 Perform site engineering work	Edit		Milestone		-	
	3.2	☐ Install a fence	Resources		Start Business Process	Install a fence		
	3.3	Lav on-site roads	Delete Task(s)		Sub-Task	Project Task		
	3.4	The site is ready for construction	Transform to Mil	estone	Successor Task	Milestone	y for constructi	
	4	Derform initial construction work	Edit Dependend	y 🕨	Predecessor Task	Start Business Pro	cess Deform in	itial constru
	т 4 1		Delete Depende	ency 🕨 📊		-	Peronin in	
	4.1		Highlight Task	12				Perform
	4.2	Perform foundation work and build b	Show Task in Di	agram 15			Perform found	lation work
	4.3	🛋 Install slabs	09/17/2015	09/21/2015				
	4.4	Initial construction work is completed	09/21/2015	09/21/2015				-
	•)	•			•

Fig. 13. Adding a sub-task

After you have clicked **Create** button, the system will let you select whether to leave the parent task unchanged or to make it a stage task (fig. 14).

If you select **No**, a sub-task is created. The parent task receives an executor and due dates. The task will have the same position, as **Perform initial construction work** task in fig. 12. Its sub-tasks will be indented.

If you select **Yes**, a sub-task is created. The parent task transforms into a stage task. A stage task does not have an executor and completes automatically after all of its sub-tasks are completed. Stage task duration and due dates depend on its sub-tasks due dates.

In the project plan, a stage task has ¹ icon, and a parent task has ¹ icon. Sub-tasks are indented.

	Create Project Sub-Task	\times
Control Co-Executor	rs Time Report Limit Attachments Resources	
Subject *	Obtain construction permit	
Executor	 No executor + Select (Manager, Assign to Me) 	
Start Date	Transform to Stage Task X	
Specify Duration Duration *	The parent task "Approve the project documentation" now has sub-tasks. Make it a stage task?	
Completion Rating	Yes No	
Priority *	Regular	
Category	~ Q +	
Description		
	Create	Cancel

Fig. 14. Transform to stage task

You can transform a stage task to a regular task (fig. 16) and a parent task to a stage task (fig. 15) at any plan editing stage. To do so, click the task with the mouse right button and select the menu entry you need.

b	Edit a project plan: "Apartment Building Construc											
	Plan	More										
	←	→ X + ♀ ♀ ⊕ ⊱:=:	<u>th</u>									
	No.	Subject		Start Date	End Date							
		Q,										
	1	Hold a meeting on the project in	itiation	08/05/2015	08/06/2015							
	2	Approve the project documentation	ion	09/14/2015	09/14/2015							
	2.1	🚖 Obtain construction permit	09/14/2015	09/14/2015								
	3	🖌 🚉 Prepare building site		08/10/2015	08/26/2015							
	3.1	🚖 Perform site engineering wor	Add		▶ 3/17/2015							
	3.2	🛋 Install a fence	Edit	Edit								
	3.3	🛋 Lay on-site roads	Resources 3/26/20									
	3.4	The site is ready for construc	Delete T	Delete Task(s) 3/26/201								
	4	▲ 🚉 Perform initial construction wor	Transfor	m to Stage Task)/21/2015							
	4.1	🚊 Perform earthwork	Edit Dep	endency	/14/2015							
	4.2	🚊 Perform foundation work an	Delete D	Dependency	/17/2015							
	4.3	🚊 Install slabs	Highligh	t Task	>/21/2015							
	•		Show Ta	ask in Diagram	•							

Fig. 15. Transform to stage task

E	Edit a	a project plan: "A	partment Build	ling Co	onst	ruction a
	Plan	More				
	←	→ ĭ ÷ Q, ⊕,				
	No.	Subject	Start Date	е	End Date	
	1	Hold a meeting on th	08/05/20)15	08/06/2015	
	2	Approve the project	Add	Þ	15	09/14/2015
	2.1	🚊 Obtain constructi	Edit		15	09/14/2015
	3	a 🚉 Prepare building site	Delete Task(s)	Delete Task(s)		
	3.1	🚉 Perform site engi	Transform to Regula	ar Task	15	08/17/2015
	3.2	🚉 Install a fence	Edit Dependency	Þ	15	08/21/2015
	3.3	🚉 Lay on-site roads	Delete Dependency	r 🕨	15	08/26/2015
	3.4	The site is ready	Highlight Task	►	15	08/26/2015
	4	🖌 🚉 Perform initial const	Show Task in Diagr	am	15	09/21/2015

Fig. 16. Transform to regular task

3.3.3. Milestone

A **milestone** is a task with a specific date. Milestones help you control project progress within specified time. Milestones have $\not\vdash$ icon in the project plan.

Click plus icon in the toolbar and select **Milestone** to add it to the project plan (fig. 10).

Creating a milestone is much as creating a project task (para. **3.3.1. Creating a Task**), except a milestone has no duration (it always lasts 1 day and has only one due date). You cannot create sub-tasks for a milestone.

3.3.4. Creating Links

Links between project tasks show dependencies and precedence relations. For example, we need to approve the project documentation after obtaining construction permit. Add a **successor task** (fig. 17) after **Obtain construction permit** task. Click the task name with the right mouse button and select **Add** \rightarrow **Successor Task** in the context menu.

E	dit a	a project plan: "Apartment Bu	ilding Const	tru	iction a	it 253 Hill St	reet		
	Plan	More							
1									
	+	→ X ◆ Q ⊕ ⊕ 5-3 <u>III</u>				8			
		Subject				Mon 03 Aug 201	5		
	No.	Q	Start Date	Er	nd Date	MTWTF	S S		
	1	🖹 Hold a meeting on the project initiation	08/05/2015	08	8/06/2015	tion			
	2	Approve the project documentation	09/14/2015	09	/14/2015				
	2.1	🚊 Obtain construction permit	4		/14/2015				
	3	▲ Subset A Prepare building site		r	Proje	ect Task			
	3.1	Edi	t		Milestone				
	5.1	Re:	Resources			Start Rusiness Process			
	3.2	Install a fence	ete Task(s)	Dusiness Process					
	3.3	🚖 Lay on-site roads			Sub-	-Task			
	2.4	The site is ready for constructi	nsform to Milestone	•	Suco	cessor Task			
	5.4	Edi	t Dependency	►	Pred	lecessor Task			
	4	Perform initial construction work Del	ete Dependency	•					
	4.1	Perform earthwork	blight Task		/14/2015				
		res e e in internet	ingrit fuor						
	- E	Sho	ow Task in Diagram		- · · ·	•			

Fig. 17. Adding a successor task

After you have added a successor task, the tasks will be linked automatically. The link is displayed in the **Predecessor** column of the tasks list and on the Gantt chart as an arrow (fig. 18). If this column is not seen in the tasks list, mouse over the strip between the tasks list and Gantt chart, press and hold the left mouse button and drag to the right. The tasks list will widen and more columns will be visible (fig. 18).

Edit of Plan	a project plan: "Apartment Bui More	ilding Cons	truction a	at 253 Hill Stre	eet", version 1		
-	→ X ÷ Q Q ⊕ ⊠ h					+ · / ×	8 8 T -
No.	Subject	Start Date	End Date	on 27 Jul 2015 T W T F S S	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 201 M T W T F
	🖹 Hold a meeting on the project initiation						
	Approve the project documentation	08/07/2015	08/11/2015		mentation		
	🚖 Obtain construction permit	08/07/2015	08/07/2015	Obtain construct	ion permit		
2.2	Approve construction documentation	08/10/2015	08/11/2015	Approve constru	uction documentation		
	⊿ 🗐 Prepare building site	08/10/2015	08/26/2015		Prepare building site		_
	🚖 Perform site engineering work		08/17/2015				
	🚉 Install a fence						
	🚉 Lay on-site roads						
3.4	🗗 The site is ready for construction						
4	⊿ 🚉 Perform initial construction work						
							~

Fig. 18. Links between tasks

You can link created tasks with the Gantt chart. To do so, mouse over the task you need until O icon appears. Press and hold one of the icons with the left mouse button and drag it to the task you need to link (fig. 19).

Plan	More				
+	→х¢९€⊕∺ш			8	+• / × = = *
No.	Subject	Start Date	End Date	15 Mon 03 Aug 2015 F S S M T W T F S	Mon 10 Aug 2015 Mon 17 Aug 2015 S M T W T F S M T W T F S S S M T W T F S
	⊿ 🚔 Prepare building site	08/10/2015	08/18/2015		
3.1	Perform site engineering work	08/10/2015	08/17/2015	Perform site engineering work	-P
	🚖 Install a fence	08/10/2015	08/13/2015	Install a fence	
	a Lay on-site roads	08/10/2015	08/13/2015	Lay on-site roads	e
3.4 4	✓ The site is ready for construction ✓ = Perform initial construction work	08/18/2015 08/31/2015	08/18/2015 09/21/2015	The sit	e is re From:Perform site engineering work - End To: Lay on-site roads - Start
4.1	🚊 Perform earthwork		09/14/2015		
	🚖 Perform foundation work and build base	09/04/2015	09/17/2015		
1.3	🚖 Install slabs	09/17/2015			
4.4	🗗 Initial construction work is completed				
			►	4	

Fig. 19. Linking tasks

Thus, you can configure tasks precedence and dependencies.

Links can be deleted, if necessary. Click the right mouse button on the task name and select **Delete Dependency** in the context menu. Then select the name of the task you need to unlink (fig. 20).

	Plan	More										
	+	→ X ◆ Q ⊕ ↔ ⊱-3 <u>II</u>				* +·/×==+-						
	No.	Subject				15 Mon 03 Aug 2015 Mon 10 Aug 2015 Mon 17 Aug 2015 Mo						
		Q,	Start Date	End Da	ate	F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M						
	1	🖹 Hold a meeting on the project initiatio	Add	Þ	2015	5 oject initiation						
	2	Approve the project documentation	Edit		2015	5 ject documentation						
	2.1	🚖 Obtain construction permit	Resources		2015	5 construction permit						
	2.2	Approve construction documentation	Delete Task(s)		2015	5 ve construction documentation						
	3	⊿ 🚖 Prepare building site	Transform to Miles	tone	2015	5 Prepare building site						
	3.1	🚖 Perform site engineering work	Edit Dependency	Þ	2015	5 Perform site engineering work						
	3.2	🚖 Install a fence	Delete Dependend	cy 🕨	C	Obtain construction permit II a fence						
	3.3	🚖 Lay on-site roads	Highlight Task	Þ	2015	5 Lay on-site roads						
	3.4	The site is ready for construction	Show Task in Diag	Iram	2015	5 The site is ready for construction 🔶						
	4	Perform initial construction work	08/31/2015	09/21/	2015	5 Perform ini						
		ren e a a			•							
1												

Edit a project plan: "Apartment Building Construction at 253 Hill Street", version 1

Fig. 20. Deleting dependencies

3.3.5. Gantt Chart

A **Gantt chart** is a graph of planned project activities. You can see segments along the time axis on the Gantt chart. Each segment represents a task or a sub-task. A segment length represents task duration. Segment endpoints represent start and end dates of the task.

The Gantt chart is separated from the tasks list with a strip by default (fig. 21). You can adjust the size of the two sections with the strip and hide and/or show tasks section contents.



Fig. 21. The strip between tasks list and Gantt chart

To change the size of the sections press and hold the strip with the mouse and drag it left/right. Click twice on the strip to hide or show the tasks list. If you hide the tasks list, a bar with N icon is shown (fig. 22). If you click the icon the tasks list will be shown.

	Mark .
	More
	→ X ∻ Q ⊕ ⊟ <u>#</u> # / X ⊟ ⊟ `
1	15 Mon 03 Aug 2015 Mon 10 Aug 2015 Mon 17 Aug 2015 Mon 24 Aug 2015 Mon 31 Aug 2015 Mon 07 Sep 2015 Mon 14
	F S S M T W T F
6	
þ	Ject documentation
c	construction permit
0	e construction documentation
	Prepare building site
	Lay on-site roads

Fig. 22. The project plan with the tasks list hidden

You can use the toolbar when working with the Gantt chart (fig. 23).

t a project plan: "Apartment E	Building Construction a	t 253 Hill Street	", version 1			
More						
→ X ◆ Q ⊕ ↔ 5-3 <u>III</u>		8		+ • / >	E = 5	Ŧ
15 Mon 03 Aug 2015 Mon 10 Au	ig 2015 Mon 17 Aug 2015	Mon 24 Aug 2015	Mon 31 Aug 2015	Mon 07 Sep 20	15 Mon	14 S
F S S M T W T F S S M T W	T F S S M T W T F S S	M T W T F S S	M T W T F S S	MTWTF	: s 👌 М Т	W
vject documentation						
construction permit						
ve construction documentation						
Prepare building site	-					
Perform site engineering work						
	Lav on-site roads					
		+	_		1	
4						÷

Fig. 23. Gantt chart toolbar

You can zoom in/out with @ and @ icons and switch to the full-screen mode with @ icon.

If you drag segments along on the chart, their start and end dates change, as well as all the related elements, if any. To change task duration on the chart, mouse over the right or the left segment endpoint (the mouse pointer should transform) and pull to the side you need. **ELMA** Gantt chart is much as **MS Project** Gantt chart. Learn more about the available functions in **ELMA Projects+ Help**.

3.3.6. Critical Path

A **Critical Path** is the shortest sequence of project tasks. The project cannot be completed before the critical path tasks are completed.

The path is called **critical** because its tasks schedule affects the project finish date. If you need to shorten the project duration, you have to shorten the critical path.

With the critical path method, you can plan tasks schedule and project finish date. The point is to determine the longest tasks sequence, considering the tasks relations and dependencies. The critical path has a zero total float, so when you change their start and end dates, project due dates also change. You need to control the critical path problems and risks, because they affect the project due dates. While the project progresses the critical path may change – some tasks may become a part of it, when dates are changed. You should use the critical path method to estimate project finish date throughout the project when you edit the project plan.

To create a critical path in **ELMA** click sicon in the project plan toolbar (fig. 24). The critical path will be marked red on the Gantt chart (fig. 24).



Fig. 24. Critical path

3.3.7. Project Plan Versioning

With **ELMA** you can edit and save several project plan **versions**. The current version is shown in the project plan title (fig. 8). Main project plan editing and saving functions are described in the previous paragraphs. Click **Save** button in the top menu of the project plan editing page to save changes (fig. 25).

To Proj	ect Publish Save (Cancel				9	Admir	nistrator	\odot	?		
Edit	Edit a project plan: "Apartment Building Construction at 253 Hill Street" version 1											
Plan	More											
+	→ X + Q Q + 5-3 <u>H</u>						- /	x e	E T	Ŧ		
No.	Subject	Start Date	End Date	15	Mon 27 Jul 2015	Mon 03 Aug 201	5 Moi	n 10 Aug 201	15	Мо		
	Q	Start Date	End Doto	FSS	MTWTFSS	M T W T F	S S M	TWTF	S S	м		
1	🚖 Hold a meeting on the project initiati	on 08/05/2015	08/06/2015		eeting on the project initia	tion						
	Approve the project documentation	08/07/2015	08/11/2015			mentation						
2.1	🚖 Obtain construction permit	08/07/2015	08/07/2015	115 Obtain construction permit								
	Approve construction documentat	ion 08/10/2015	08/11/2015				n					
	▷ 🚖 Prepare building site	08/12/2015	08/25/2015									

Fig. 25. Saving a project plan version

After you have done it, project plan page opens; the plan version receives **Draft** status. Plan versions information is available on **Versions** tab of the project plan page (fig. 26). Click a version name to proceed to editing of this version. You can publish it and use as the active one. Project plan publishing is described in para. **3.3.8. Publishing a Plan**.

To Project	Publish	Edit	Operations		Admi	inistrator	?				
Apartment Building Construction at 253 Hill Street Project Plan - version 1											
You are viewing a Draft of the project plan: version 1 The project plan has unpublished tasks. All changes will be applied to the tasks only after the project plan is published.											
Plan Abo	out the version	Versions									
				Quantity 15 v	Items found: 1	Pages: 1	S				
Name	Start Date	End Date	Date published	Published By Version 🗸	Accepter	Status					
Version 1	2/8/2015	3/1/2016		1		🖉 Draft	1				

Fig. 26. Project plan page. Versions tab

If a project plan version has **Draft** status, the changes you made will be saved in the system but will not be put to work. A project plan can have many drafts, but only one

active version. An active version has **Current** status. To receive this status the version needs to be published (see the next paragraph). A plan version can also have **Outdated** status. It means that it was published, but then replaced with a newer published version.

3.3.8. Publishing a Plan

To save changes in a project plan, you need to publish the version you work with. Click **Publish** button on the project plan page (fig. 8). You can do it on the project plan editing page (fig. 9).

After you have published the plan, its version status will change from **Draft** to **Current**. The tasks will be assigned to the executors. A successful publication notification will be shown on the plan page.

To Project		t Edit Operations					Administ	rator	?	
A	Apartment Building Construction at 253 Hill Street Project Plan - version 1									
l	i The Apartment Building Construction at 253 Hill Street project plan is published									
1	Plan About the version Versions									
	÷ •	→ X			\$			т	•	
	No.	Subject	Start Date	End Date	Mon 14 Sep 2015	Mon 21 Sep 2015 M T W T F S S	Mon 28 Sep 2015 M T W T F S	Mon 05 Oct 2 S M T W T	201 F	
	1	Hold a meeting on the project init	tiation 09/15/2015	09/16/2015					-	
	2	Approve the project documentation	on 09/17/2015	09/21/2015	intation					
	2.1	Obtain construction permit	09/17/2015	09/17/2015	ı permit					
	2.2	Approve construction document	tation 09/18/2015	09/21/2015	umentation					
	3	Prepare building site	09/22/2015	10/06/2015	Prepare building site	_	_			
	3.1	Perform site engineering work	09/22/2015	09/29/2015	orm site engineering work					
	3.2	🚖 Install a fence	09/30/2015	10/05/2015		Install a fe	nce			
	3.3	🚖 Lay on-site roads	09/30/2015	10/05/2015		Lay on-site ro	ads			
	3.4	The site is ready for construction	on 10/06/2015	10/06/2015		The site	is ready for constructi	ion 🤙		
	4	Perform initial construction work	10/06/2015	10/28/2015		Perform	n initial construction v	vork	l .	

Fig. 27. A published project plan version

You cannot edit a published version. If you click **Edit**, the system will show you a notification: after saving, the new version of the project plan will be created with **Draft** status. To apply changes you need to publish this new version (fig. 28).

То	Projec	t Publish Save Cancel					Administrat	or ?	
E	Edit a project plan: "Apartment Building Construction at 253 Hill Street", version 2								
Y At	ou are fter sav	editing the Currrent version of the project plan ving, the new version of the project plan will be create	d					×	
P	lan	More							
	_								
←→ X ◆ Q Q ⊕ ⋈ <u>h</u> ♦ + / × ⊂ ⊡						3 3 T -			
		Subject			Mon 14 Sep 2015	Mon 21 Sep 2015	Mon 28 Sep 2015	Mon 05 Oct 201	
1	No.	Q,	Start Date	End Date	MOT W T F S S	M T W T F S S	M T W T F S S	MTWTF	
1	1	a meeting on the project initiation	09/15/2015	09/16/2015	2			^	
	2	Approve the project documentation	09/17/2015	09/21/2015	entation				

Fig. 28. Saving changes in a new version notification

3.4 Publishing a Project

Creating a project and shaping a plan was described in the previous paragraphs.

After a project is created it receives **Draft** status. It means that the project manager can configure the project main settings, tasks plan, etc. Team members will not be able to see these changes yet. A notification is shown on the project page (fig. 29).

Publish the project to put the changes into effect, assign tasks to the executors etc. To do so, click **Change Stage** button on the project page (fig. 29).



Fig. 29. Project page at the Draft stage

Select Active in the New Stage window, click Change (fig. 30).

😼 😽 [~	\equiv		6	Adr	ninistrator		?	
Create Task Send Message C	reate Change Stage ument	Operations ~	Go to				2	\odot	٠	
Project - Apartment Building Construction at 253 Hill Street										
You are reviewing a draft of the project. To start the project it must be published - choose an appropriate project stage to do that. After the publication, project will become Current and project tasks will be assigned to executors.										
General information			\odot	🔶 Projec						
Project Stage	Change the project stage X play									
Project End Date	Current Stage: Draft New Stage: ect Tasks							\odot		
Manager	Active			~	Subject		End D)ate 🔨	%	
Project Role					play					
Stakeholders +: & w Supervisors +:			Change	Cancel					\odot	
							Plan		Fact	

Fig. 30. Changing the project stage

After you have done it, the page will be refreshed. The project stage will be changed and a respective notification will be shown (fig. 31).

Create Task	Create Document	Operations	Go to		9	Admi	nistrator	\odot	?
Project - Apartmen	Project - Apartment Building Construction at 253 Hill Street								
i The project stage is chang	ged								
General information				🔶 Project Risks					
Project Stage	Active			No data to display					
Project End Date	from 9/15/2015 🧕	till 10/6/2016 [9						

Fig. 31. Project page at the Active stage

Now you can start project activities, complete project plan tasks, etc. Project progress requires monitoring and controlling by project managers and supervisors (learn more about it in the next chapter).

Chapter 4. Monitoring and Controlling Project Progress

As the project progresses, you need to manage project constraints (such as budget control, project plan execution, tasks due dates, resources management, etc.)

One of the methods of project due dates control is the **critical path method** (para. **3.3.6**. **Critical Path**). **ELMA Projects+** project progress monitoring and controlling functions are described in the following paragraphs.

4.1 Projects Home Page.

Select **Projects** in the left menu to proceed to **ELMA Projects+ Application** home page (fig. 32).

September 13 Sunday	Add Project Optimizer	Administrator ?
Projects	Current Projects	
Project List	🔁 Current Projects 📀	Project Milestones
All All Annotation Ann	Quantity 15 v Items found: 1 Pages: 1 G Apartment Building Construction at 253 Hill Street (Active)	a Month (1) a All (7)
Project archive	Administrator 9/15/2015 - 10/6/2016	Project Stage Tasks from Me Items found: 1 Pages: 1 Quantity 15 Items found: 1 Pages: 1 Approve the project documentation 9/21/2015 0% Project Task Apartment Building Construction at 253 Hill Street 9/21/2015 0%
Edit Milestones		

Fig. 32. ELMA Projects+ Application home page

Three portlets are displayed on this page by default:

- **Current Projects.** This portlet shows the list of projects at the **Active** stage and key project information (the manager and the end date).
- **Project Milestones.** This portlet shows the list of project milestones with **Active** status. To view the tasks list, click the plus icon .
- **Project Stage Tasks from Me.** This portlet shows the list of project stage tasks, controlled by the current user.

You can configure the contents of the home page and the portlet set. These configurations are described in **ELMA BPM Platform** quick-start manual.
4.2 Tasks Control

ELMA provides you with many task control tools. You can control task due dates on the project plan page (fig. 33):

- Half-completed tasks are highlighted yellow;
- Overdue tasks have red font color;
- New tasks have bold font type.

	To Projec	t Edit Operations			Administrator ?						
	Apartment Building Construction at 253 Hill Street Project Plan - version 5										
	Plan	About the version Versions									
	÷ +	→ X ◆ Q ⊕ ⊕ ⊱3 <u>III</u>			÷						
	No.	Subject	Start Date	End Date	Mon 31 Aug 2015 Mon 07 Sep 2015 Mon 14 Sep 2015 Mon 21 Sep 201 M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S S M T W T F S S M						
	1	🖹 Hold a meeting on the project initiation	09/07/2015	09/08/2015	n the project initiation						
	2	Approve the project documentation	09/09/2015	09/14/2015	ve the project documentation						
	2.1	Obtain construction permit	09/09/2015	09/09/2015	Obtain construction permit						
	2.2	Approve construction documentation	09/10/2015	09/14/2015	rove construction documentation						
J	3	⊿ 🚖 Prepare building site	09/15/2015	09/29/2015	Prepare building site						
	3.1	a Perform site engineering work	09/15/2015	09/22/2015	Perform site engineering work						
	3.2	🚖 Install a fence	09/23/2015	09/28/2015	Install a fence						
	3.3	🚊 Lay on-site roads	09/23/2015	09/28/2015	Lay on-site roads						
	3.4	The site is ready for construction	09/29/2015	09/29/2015	The site is ready for co						
	4	Perform initial construction work	09/29/2015	10/21/2015	Perform initial constru						
	4.1	🚖 Perform earthwork	09/29/2015	10/08/2015	Perform						
	4.2	Perform foundation work and build	10/09/2015	10/15/2015	Pe 🗸						
				F							

Fig. 33. Project plan markers

ELMA Projects+ provides you with standard **ELMA BPM** task control tools (completion check, task monitoring, notify when completed). Learn more about these functions in **ELMA Help**.

Milestones are an important project control tool. The list of project milestones is on the **ELMA Projects+** home page. You can find more information on these tasks if you select **Projects** \rightarrow **Milestones** in the left menu. If a milestone is overdue, it has red font color (fig. 34).

September 13 Sunday						dministrator 7 🧐 📺	\odot
Projects	Project Milestones						
Project List Milestones	Bearch				Q	Search Sho	w only mine
T All	Status	All	~				
	Advanced Search				Quantity 15 v Items	s found: 8 Page	s: 1 😘
	Task	Executor	Supervisor	End Date 🔨	Project	Project Stage	Priority
	The project documentation is approved Milestone Apartment Building Construction at 253 Hill Street	on Administrator	Administrator	9/9/2015	Apartment Building Construction at 253 Hill Street	Active	•
	The site is ready for construction Milestone Apartment Building Construction at 253 Hill Street	on Ward S.	Ward S.	9/23/2015	Apartment Building Construction at 253 Hill Street	Active	•
Edit	Initial construction work is completed Milestone Apartment Building Construction at 253 Hill Street	on Ward S.	Ward S.	10/15/2015	Apartment Building Construction at 253 Hill Street	Active	•

Fig. 34. Milestones

4.3 Resource Workload Bar Chart

Project resources are human, technical and/or material units, used to complete project tasks and achieve project goals.

These are the types of resources in **ELMA**:

- Human resources are ELMA users and other team members;
- Technical resources (machines, equipment, rooms), involved in the project;
- Material resources are supplies, involved in the project.

Project resources are described in **Chapter 6**.

In this paragraph, we concentrate on resource workload control. Each task has its executor, and sometimes some users may have to execute several tasks. It results in low work quality and missed deadlines.

To avoid such situations use the resource workload bar chart. Click the icon marked in fig. 35. The bar chart displays all the executors of the current project.



Fig. 35. Resource Workload Bar Chart

The area highlighted in fig. 35 consists of two parts: the users list and the bar chart. A time bar in the middle, adjacent to the strip, shows a resource workload in hours. Bar height on the bar chart is the workload of a respective resource on that day. Pink line marks an eight-hour workday. A bar is green, if the user workload is eight hours a day or less, otherwise the bar is red. Double click the bar to proceed to the current user resource load (fig. 36).

Apar	tment Bu	uilding Constru	ction at 253	Hill Street Pro	oject Plan - versio	on 6		
Plan	About the ve	rsion Versions						
+	→ X		.1	Resource Lo	bad		×	↓ Sep 2015 Mon 21 Sep
No.	Q	Information about the V	Vard Steven resourc	e load				W T F S S M T W T
4.3 4.4	🖹 La 💤 Th	From	09/17/2015 📰	to 09/17/2	2015 🖼		Show	ady for construction
5	⊿ 🚖 Perf	Project	Plan	Task	Start	End	Load	tial construction work
5.1 5.2	■ P€	Apartment Building Con 253 Hill Street	nstruction at 6	Install a fence	9/17/2015	9/22/2015	100	Perform earthwork
5.3 5.4	i≘ In r∳ In	Apartment Building Con 253 Hill Street	struction at 6	Lay on-site roads	9/17/2015	9/22/2015	100	
	Administra Ward Ster	ator ELMA						
4					▶ ◀			•

Fig. 36. Resource load

Thus you can control and monitor users workload. You can edit the project plan, reassign executors, etc. using these data. Learn more about planning workload in paragraph **6.2.3.2. Planning Workload**.

Chapter 5. Completing a Project

When you complete a project, you officially finish all the project activities. The manager analyses all project data to make sure the project is completed. Now you have to change the project stage to **Completed**.

Click **Change Stage** button (fig. 29). Select **Completed** in the field **New Stage** of the emerged window and click **Change** (fig. 37).

Create Task Send Message Create	change Stage	Operations	Go to							
Project - Apartment Building Construction at 253 Hill Stru										
General information			\odot							
Project Stage	Active									
Project End Date	from 9/1/2015 🔯 ti	ll 9/22/2016 [🝳								
Manager	Administrator									
Change the p	project stage	×								
Current Stage: Active New Stage:										
Completed		~								
Completed		~	\odot							

Fig. 37. Completing the project

The project stage will be changed and a notification will appear (fig. 38). All active tasks will be canceled.

Change Stage Create Task Project - Apartm	ent Building Construction	on at 253 Hill Str	eet	2	Administrator ?
The project stage is char	nged				
Project completed and mo	ved to archive.				
General informat					
Project Stage	Completed		No data to display		
Project End Date	from 9/1/2015 🝳 till 9/2	2/2016			
Manager			Type Priority Subject		End Date 🔺 %

Fig. 38. Completed project page

Completed projects are not displayed on **ELMA Projects+** home page. You can find them in the **Project archive** (fig. 39).

September 13 Sunday	Add Project				9	Administrator	
Projects	Project archive						
Project List	Search					Q Search Show only	mine
— 📄 Главная — — Общие фильтры	Object Type Al	I		✓ Status	Completed		~
Current projects Project drafts Project archive	Advanced Search					_	
					Quantity 15 v Items	s found: 1 Pages: 1 🔮	è 🕕
	Name	Project Stage	Start Date	End Date	Status	Manager	
	 Apartment Building Construction at 253 Hill Street 	Completed	9/1/2015	9/22/2016	🗙 Completed	Administrator	
↓ ►							
Milestones							

Fig. 39. Project archive

Chapter 6. Projects Conveyor

Projects Conveyor concept optimizes typical processes execution by using business processes and **ELMA Projects+** functions.

Project management organizations work with similar projects, and need to complete the same operations and stages.

ELMA Projects Conveyor concept applies business processes to improve typical project management. Business process management helps to organize typical processes and concentrate on unique tasks, and thus improve typical project execution.

You can avoid deviations in projects with **ELMA Projects+**. The system alerts you about all the negative changes. For example, if planned values cannot be reached.

You can control and monitor projects on different Projects Conveyor stages. Staging projects clarifies the organization in general.

Projects Conveyor is much as an actual conveyor. If there is too many projects at certain stages, it means some of the projects are flawed and you need to get the situation under control.

Business processes are most useful for improving typical operations completion.



Fig. 40. Projects Conveyor

6.1 Configuring the Projects Conveyor

Projects Conveyor configuration includes these steps:

- Identify projects type in the organization's activity;
- Identify project life cycle and life cycle business processes for each project type;
- Identify project roles, project stages, typical risks, etc. for each project;
- Configure user interfaces for ELMA Projects+ pages.

A construction company is an example of a project management organization. In such a company, each external project is a construction project. There are different types of construction projects. Let us take Low-Rise construction as an example.

Low-Rise construction projects have common stages, typical tasks, documentation, risks, etc. Therefore, it is easy to configure the project conveyor for this type of projects. First, configure this project type in **ELMA Projects+**.

6.1.1. Configuring Project Type

6.1.1.1 Creating a Project Type

To configure the project conveyor, create and configure a project type with **ELMA**. Select **Projects** in ELMA Designer and click **Add** in the top menu (fig. 41).

0			ELMA 3.7.3.1371	9			_ 🗆 🗙
Menu Organizational Structure Processes	Obje	cts Documen	t Management Projects	KPI	Reports Scripts P	ublication	Style 👻 MAX 📀
Add Change Delete Add Edit Delete		Move					
		Operati					
Project Types	Pr	oject Type List					
🖃 🚇 All Project Types	N	lame	Author		Created On	Changed On	Published On
Project	🖹 Pr	oject					
🗍 Recycle Bin							

Fig. 41. Creating a project type in ELMA Designer

Enter the project type name in the emerged window and click $\ensuremath{\textbf{Next}}.$

0	Cre	eate Project Type	- 🗆 🗙				
	Step 1 General S	Settings					
	Displayed Name *	Low-Rise Construction of Cottages					
		Object Name in your language. The name may contain any character					
	Group*	Projects+	4 × -				
General	Description		^				
2			~				
2		Data Structure	*				
Base Type							
0							
3							
Attributes							
Autobucs							
4							
Templates		-> N	lext 🛞 Cancel				
			.::				

Fig. 42. Creating a project type. Step 1

Leave default settings at the second step and click **Next**.

At the third step, you can configure the project type attributes. For example, create a **Contractor** type attribute to store project customer data in the system.

System fields are marked blue and cannot be changed or deleted. You can add attributes at this stage. Click the right mouse button on the list and select **Add Property** (fig. 43).

	Displayed Name	Property Name	Туре		Search	
4	Author	CreationAuthor	User (Ob	ject)	~	
	Changed On	ChangeDate	Date/Tin	10	~	
	Changed By	ChangeAuthor	User (Ob	ject)	~	
	Start Date	StartDate	Date/Tin	ne	~	
	End Date	FinishDate	Date/Tin	ne	~	
	Status	Status	Project S	itatus (Enumeration)	~	
	Risks	Risks	List<"Project Risk (Object)"> (1-N)			
2	Project Roles	Project Roles List<"Project Role (Object)"> (1-1				
4	• Manager	Manager	User (Object) List «"Project Access Settings (Object) s List «"Budget Expense (Object)"> (1-N		~	
Base Type	Project Access Settings	AccessSettings				
	Planned Expenses	BudgetExpenseltems				
	Planned Income	BudgetIncomeltems	Add Property hnel (Object)	et Income (Object)"> (1-N)		
	Message Channel	InfoChannel		nnel (Object)	~	
	• Folder	Folder	Add Block	ect)		
	Budget Folder	FolderBudget		ect)		
	Process Instance	WorkflowInstance		^o rocess Instance (Object)		
A + - 7 - 1	Time Report Limit	PlanWorkLogs		Report Limit (Object)"> (1-N)		
Attributes	Calendar	CalendarType		pe (Enumeration)	~	
	Personal Calendar	Calendar		endar (Object)		
	Common Calendar	GlobalCalendar		endar (Object)		
Λ	Comments	Comments	List<"Comment (Object)"> (N-N)			
4	Current Plan	CurrentPlan	Project P	'lan (Object)		

Fig. 43. Adding a project type attribute

Create **Customer** and **General Contractor** fields, select **Contractor** type for both (fig. 44).

0	Property Settings – 🗆 🗙
General More Documentation	
Displayed Name *	Customer
	Property Name in your language. The name may contain any characters
Type *	Contractor
Link Type *	Single (1-1 or N-1)
Required Field	
Description	
	v
	Data Structure ¥
	Cancel Cancel

Fig. 44. Configuring project attribute type

After you have created the fields, they are added to the attributes list. Check the **Search** box for both, so that you could filter projects with these fields (fig. 45). Click next to proceed to the next step.

	Displayed Name	Property Name	Туре	Search
4	Changed By	ChangeAuthor	User (Object)	~
	Start Date	StartDate	Date/Time	~
· ·	End Date	FinishDate	Date/Time	~
	Status	Status	Project Status (Enumeration)	~
	Risks	Risks	List<"Project Risk (Object)">	
	Project Roles	ProjectRoles	List<"Project Role (Object)">	
	• Manager	Manager	User (Object)	\checkmark
2	Project Access Settings	AccessSettings	List<"Project Access Settings	
2	Planned Expenses	BudgetExpenseItems	List<"Budget Expense (Objec	
	Planned Income	BudgetIncomeItems	List<"Budget Income (Object)	
Base Type	Message Channel	InfoChannel	Public Channel (Object)	\checkmark
	Folder	Folder	Folder (Object)	
	Budget Folder	FolderBudget	Folder (Object)	
	Process Instance	WorkflowInstance	Workflow Process Instance (
	Time Report Limit	PlanWorkLogs	List<"Time Report Limit (Obje	
	Calendar	CalendarType	Calendar type (Enumeration)	\checkmark
Attributos	Personal Calendar	Calendar	Object Calendar (Object)	
CT III (JUICS)	Common Calendar	GlobalCalendar	Object Calendar (Object)	
	Comments	Comments	List<"Comment (Object)"> (N	
	Current Plan	Current Plan	Project Plan (Object)	
1	Customer	Customer	Contractor (Object)	✓
-	General Contractor	GeneralContractor	Contractor (Object)	✓

Fig. 45. Advanced list of project type attributes

At step four, you need to select a project name template. These templates name projects of this type in **ELMA Projects+**. For example, we name projects **Cottage Construction** (Customer name). To do so, enter **Cottage Construction** () in the **Project Name Template** field and set the cursor in the brackets. Then select **Insert project attribute** \rightarrow **Customer** \rightarrow **Name** (fig. 46).

				Group of Activities
0	Create Project Type		_ 🗆 🗙	Marketing Activity
				UID
	Step 4 Project Name Template			Name
				Туре
	Project Name Template	Cottage Construction		Industry
1		Insert project attribute	-	Regional Group
	Crosto document foldoro sutomatically	Project Attributes 🕨	UID	Responsible
			Project Stage	Fax
General			Created On	Web Site
			Author	Partner
			Changed On	Company's Day
0			Changed By	Annual Income
.2			Start Date	Legal Address
			End Date	Postal Address
			Status	Individual Taxpayer Number (ITN)
			Manager	Description
			Message Channel	Created On
			Folder	Author
2			Budget Folder	Changed On
0			Process Instance	Changed By
			Calendar	Next Relationship
Attributes			Personal Calendar	Deleted
			Common Calendar	Delete from Base
			Current Plan	CategoriesHash
			Customer +	Marketing Event
			General Contractor	
Templates	Jack 🖓	🚽 Nex	kt 🛞 Cancel	

Fig. 46. Creating a project name template

You have created a template as in fig. 47.

Create Project Type	- 🗆 ×
Step 4 Project Name Template	
Project Name Template	Cottage Construction ({\$Customer.Name})
Create document folders automatically	

Fig. 47. Created project name template

Click **Next** to complete creating a project type. Project type page opens. Here you can fine-tune the type (fig. 48).

•	ELMA 3.	3.13719	_ 🗆 🗙
Menu Organizational Structure Processes	Objects Document Management F	ojects KPI Reports Scripts Publication	Style + MAX 📀
Save General			
Project Types	Project Type List 😑 Low-Rise Constr	ction of Cottages 📀	
□	Description Attributes Table Project Type Name Low-Rise Construction of Cottages Forbid to create in web application Description Description Data Structure	PFilter (E Life Cycle) Advance	Ad Constructions)

Fig. 48. Project type page

You can change the attributes list on the **Attributes** tab, as described at project type creation **Step 3**.

6.1.1.2 Configuring Life Cycle

A project life cycle is a set of project stages and transitions between them. You can configure it in the **Life Cycle** tab (fig. 49).

0	ELMA 3.7.3.13719 – 🗆 🗙								
Menu Organizational Structure Processes	Objects Document Mana	gement Projects KPI Rep	orts Scripts Publication	St	yle 👻 🦳 MAX 📀				
Save Stage Stage Stage Stage	Edit Delete ansition Transition								
Project Turgen	Project Types								
HI Project Types Low-Rise Construction of Cottages Project	Allow to change statuses n	Table Filter Life Cycle	Flows (Processes)	dvanced E Forms (reresentations)	Templates 4 🕨				
	Initial Stage	Transition	Final Stage	Action By de	fault				
	<u>Draft</u>	Publish Project	Active	Publish	*				
				Yes	+				
	Active	Close Project	Completed	Close (Send to Archive)					
			A .:	-					
	4 Completed	P Reopen Project	Active	Reopen	<u> </u>				
			<u>а</u> а						
			Draft	Publish Project	Active				
					:				

Fig. 49. Project type page. Life Cycle tab

6.1.1.2.1 Project Statuses and Stages

A **Project Status** shows the project general state and has three values: draft, active, completed. **Draft** status means that project activities has not been started (**Draft** is a default status for all projects in **ELMA**). **Active** status means that the project is started. **Completed** status means that the project is finished.

A **Project stage** is a life cycle stage. It shows the current project progress.

A project type has three default stages (**Draft**, **Active** and **Completed**) and default transitions between them.

These three stages are not detailed and informative enough for **Low-Rise construction of cottages**. We can use the stages below for this project type:

- Draft project preparation stage;
- Obtaining Construction Permits;
- Performing Construction Works;
- Construction Completion and Commissioning
- Completed

Configure these stages in the system. Leave **Draft** and **Completed** stages. Delete **Active** stage. Select it and click **Delete Stage** in the top menu (fig. 50).

0		ELMA 3.7.3.13719			_ 🗆 ×				
Menu Organizational Structure Processes	Objects Document Manage	ment Projects KPI Reports	Scripts Publication		Style 👻 🦳 MAX 📀				
Add Change Stage Stage	Delete Save								
Project Types	Project Type List	tise Construction of Cottages							
All Project Types Low-Rise Construction of Cottages Project	Allow to change statuses ma		Automatically publish	the project upon creation					
⊞ riget	Initial Stage	Transition	Final Stage	Action	By default				
	<u>Draft</u>	Publish Project	Active	Publish	×				
					Yes 🛑				
	Active	Close Project	Completed	Close (Send to Archive)	×				
	Completed	Reopen Project	Active	Reopen					
		а							
		Publish Project	Active	Close Project					

Fig. 50. Deleting a life cycle stage

Now click **Add Stage** in the top menu to add life cycle stages (fig. 49). Enter a name in the emerged window and click **OK**.

0	Create a new stage 🛛 🗕 🗖 🗙
Name *	Obtaining Construction Permits
Description	
	OK 😢 Cancel

Fig. 51. Creating a life cycle stage

Add the other stages in the same way (fig. 52).

0	ELMA 3.7.3.	13719			- 🗆 🗙		
Menu Organizational Structure Processes	Objects Document Management	Projects KPI Reports	Scripts Publica	ation Styl	e - MAX 📀		
Add Change Delete Stage Stage Transition	Delete Transition ns General						
Project Types							
🖃 🚰 All Project Types	i Description 📔 Attributes 🔲 Table	Filter 📴 Life Cycle	Flows (Processes)	Advanced <> Forms (rereser	ntations) 🛛 🖉 🕨		
Low-Rise Construction of Cottages	Allow to change statuses manually		Automatic	ally publish the project upon creat	tion		
	Initial Stage	Transition	Final Stage	Action By defa	ault		
_ ,	Draft			Publish Yes			
	Completed				<u>+</u>		
	Obtaining Construction Permits				<u> </u>		
	Performing Construction Work						
		<u>q</u>					
	Ψ						
			Draft				
					.::		

Fig. 52. Project type stages

Each transition between stages requires different conditions. Configure transitions.

First, configure the transition between **Draft** and **Obtaining Construction Permits** stages. The project must be published. Click **Create Transition** in the top menu (fig. 52) and fill in the data in the emerged window (fig. 53).

0	Create a transition	- 🗆	x
Name *	Publish Project		
Description			< >
Initial Stage*	Draft	-]
Final Stage*	Obtaining Construction Permits	-]
Action *	Publish	•	
	Define Process		
	О К	😢 Can	cel

Fig. 53. Creating Publish Project transition

0	Create a transition – 🗆 🗙
Name *	Project Completed
Description	
Initial Stage*	Construction Completion and Commissioning
Final Stage*	Completed
Action *	Close (Send to Archive)
	OK 😢 Cancel

Create a completing transition in the same way (fig. 54).

Fig. 54. Creating Project Completed transition

The main transition principle is that certain tasks must be completed to transit to the next stage. This principle applies to all transitions between **Obtaining Construction Permits** and **Construction Completion and Commissioning**. Add business processes to each transition. A transition to the next stage cannot be performed until the business process is completed.

Create all the transitions without defining business processes (not created yet). Creating processes and adding them to the life cycle are described below (para. **6.1.1.4 Modeling Project Processes**).

0	Create a transition – 🗆 🗙
Name *	Start Construction
Description	
Initial Stage*	Obtaining Construction Permits
Final Stage*	Performing Construction Work
Action *	Without processing
	Define Process <not selected=""></not>
	OK Sancel

Fig. 55. Creating Start Construction transition

As the result, the project life cycle looks like in fig. 56.

Project Types	Project Type List Low-Rise Constru	iction of Cottages * 🛛					
🖃 🚇 All Project Types	🗈 Description 🕼 Attributes 🔚 Table 🐨 Filter 😫 Life Cycle 🔘 Flows (Processes) 🧔 Advanced 🐼 Forms (reresentations) 📮 Templates 🕃 Scripts						
🚔 Low-Rise Construction of Cottages	Allow to change statuses manually		Automatically publish the project upon creation	ation			
	Initial Stage	Transition	Final Stage	Action By default	^		
-	Draft	Publish Project	Obtaining Construction Permits	Publish	×		
				Yes	-		
4	Completed				-		
	Obtaining Construction Permits	Start Construction	Performing Construction Work	Without proc	×		
					4		
	Performing Construction Work	Construction Work Completed	Construction Completion and Commissioning	Without proc	×		
					-		
	Construction Completion and Commissioning	Project Completed	Completed	Close (Send t	×		
					🚽 🗸		
			Δ				
			Draft Publish Proj	Obtaining Construction	on Permits		
			Publish Problem	••••••••••••••••••••••••••••••••••••••			

Fig. 56. Project life cycle transitions

6.1.1.3 Publishing a Project Type

Publish a project type to save changes and make it available for business processes modeling. Click **Save** in the top menu and select **Publish** (fig. 57).

0	ELMA 3.7.3.13719							
Menu Organization	nal Structure Proce	esses Objects	s Document Management Pr	ojects KPI Reports Sc	ripts Publication		Style 👻	MAX 🕐
Add Change Delete	Create Edi	Delete	Save					
Stage Stage Stage Stages	Transition a transi Stage Tra	tion Transition nsitions	- Dubliab					
Project Types			ise Constru	ction of Cottages * 😣				
🖃 🚇 All Project Typ	es		cription 📕 Attributes 🥅 Table 🕤	7 Filter 😫 Life Cycle 🔘 Flows				
- E Low-Rise Co	onstruction of Cottages	I Allo	w to change statuses manually		Automatically publish the pro	ject upon creation		
the Recycle Bin		Initial St	age	Transition	Final Stage	Action	By default	^
- m necycle om		Draft		Publish Project	Obtaining Construction Permits	Publish		×
							Yes	-

Fig. 57. Publishing a project type

Select **Publication** tab and restart **ELMA** server to apply changes (fig. 58).

0			EL	.MA 3.7.3.13719			_				×
Menu	Organizational Structure	Processes C	bjects Document Ma	anagement Projec	ts KPI	Reports	Scripts	Publication	Styl	e 👻 MAX	0
Gener Sectio	al Restart server										
Warnin The object	g! ct model has been chan	ged. For change	s to come into effect	the server must be	restarted. Y	'ou can do ti	hat from he	ere by clicking	the Restart Se	rver button.	Â
க் Org	anizational Structure			* 0	Processes					*	
The org	anizational structure is	published (versio	n: 13)	Pro		nged:			o Processes		
Published	d On	5/15/20	15 2:12 PM	Draf	s			1			
Published	d By	Adminis	strator ELMA	Publ	ished			42			
				Dele	ted			9			
											~

Fig. 58. Restarting ELMA server

The project type is available for modeling business processes in the web application. Now we can proceed to modeling business processes for each transition and add the processes to the transitions.

6.1.1.4 Modeling Project Processes

Model project processes in **ELMA Designer**, using **Processes** page. Project processes modeling is much as business process modeling. Learn more about business process modeling in **ELMA BPM Platform** quick-start manual and in **ELMA Help**. This section describes project processes distinct features.

Take **Start Construction** transition as an example (between **Obtaining Construction Permits** and **Performing Construction Work**). Consider the following logic. After obtaining construction permits, you need to hold a tender for general contractor, who will perform construction woks. In this case, you need to start a tendering business process in the project. Only after the business process is completed the project stage can change to **Performing Construction Work**. **ELMA Projects+** provides you with all the necessary tools.

6.1.1.4.1 Creating a Project Process

Assume that the tendering business process has this structure:



Fig. 59. General contractor tendering business process

Since you are going to use the process above for transitions, you need to store the project information in the process context. Create a context variable (name it **Project**) with **Basic Project Type** (All objects \rightarrow Projects+) and check the **Input** box (process context is described in **ELMA BPM Platform** quick-start manual). In the same way, create a **Low-Rise Construction Project** input variable (set **Low-Rise Construction of Cottages** type).

Next, you need to select the process model step after which the project stage changes. The stage can change at any project process step, but in this case, it is best to change it after all tasks are completed.

In a business process map, use **Change Project Stage** activity in the **Plug-Ins** section to change the project stage.



Fig. 60. Change Project Stage activity

Include the activity into the process map, identify its place and name and link it to other activities (fig. 61).



Fig. 61. Adding the activity to the process map

Double click the activity to open its configuration window (fig. 62). Select **Input/output Attributes** tab. In the field **Project**, specify the project, in which you need to change stage. In the field **Project Stage**, specify the life cycle stage you need to set.

0	Change the project stage to "Performing Construction Work' – 🗆 🗙								
General Input/Output	General Input/Output Attributes								
	Input Variables			Output Variables					
Parameters	Туре	Process Context	Parameters	Туре	Process Context				
Project	Basic Project Type (O	<not defined=""></not>							
Project Stage	Project Stage (Object)	< <u>Not defined></u>							
			٩						
			•						
			4						
	📀 OK 🔞 Cancel								

Fig. 62. Change project stage configuration

Click **<Not defined>** in the **Project** field and select **Project** in the context menu (that is the name of the variable we created earlier). The value of this variable will be selected automatically. It depends on the project you need to change stage in (para. **6.2.4**. **Changing Life Cycle Stages**).

Click **<Not defined>** in the **Project Stage** field. Select **Create Property** in the context menu (fig. 63).

0	Change the pr	oject stage to "	Perfo	orming Construc	tion Work"	_ 🗆 🗙
General Input/Output /	Attributes					
	Input Variables				Output Variables	
Parameters	Туре	Process Context		Parameters	Туре	Process Context
Project	Basic Project Type (O	<not defined=""></not>				
Project Stage	Project Stage (Object)	<not defined=""></not>				
		2	Enter	Value		
		-	Create	Property		
			4			
					О К	🛞 Cancel

Fig. 63. Creating a context variable to store the project stage

After you have selected it, the settings window opens. Select **More** tab and check the **Input** box (fig. 64). Leave other settings unchanged and click **OK**.

0	Property Settings	-	□ ×
General More Documentation			
Settings			* ^
Involved in search (filter)			
Input			
Output			
Cascade update	Save changes	¥	
Action when copying	By default	-	
Display in Representations			*
Edit Form	Show	Read only	
View Form	Show		
Filter Form	Show	Read only	
List (table)	Hide	•	~
		О К	😢 Cancel

Fig. 64. Project Stage type variable settings

Change project stage settings window should look like in fig. 65.

0	Change the project stage to "Performing Construction Work" – 🗖 🗙								
General Input/C	General Input/Output Attributes								
	Input Vari	ables			Output Variables				
Parameters	Туре	Process Context		Parameters	Туре	Process Context			
Project	Basic Project Type (O	Low-Rise Construction of Cottages							
Project Stage	Project Stage (Object)	Project Stage	4						
			1						
			1						
			4						
			ł						
					О К	🔞 Cancel			

Fig. 65. Change project stage completed settings

Click **OK**. Publish the business process. Click **Save** button and select **Publish** (fig. 66). This operation is described in **ELMA BPM Platform** User Manual manual.

Menu Or	Menu Organizational Structure			Objects	Document M	anagement
			1		9	
Model	Save	Check	New Sub-Process	Start Debugging	Visibility of Variables	Naming instances
Section		Dublin	ral			
		Publisi	General	Contractor*		
Graphic Mo	del 🔛 Contex	xt 👵 P	erformance Ma	trix 🕥 Metri		
	BPMN Elemen	its				
🖃 📄 Events	;		<u> </u>		Project Manager	
🔿 Sta	art					
🔘 Int	ermediate				$\mathbf{\gamma}$	
En O En	d				Prepare	
🖃 📄 Operat	tions				tender for selection of	a
🔳 Us	er Task				general contra	ctor

Fig. 66. Publishing a business process

Model business processes for other life cycle transitions in the same way. Their details depend on the project activities of a company.

6.1.1.4.1 Adding Processes to Project Life Cycle

Open the project type page and select **Life Cycle** tab (fig. 56). Click the **Start Construction** transition. Select **Start Process** in the **Action** field in the emerged window. Click **Add Process** and select **Tender for Selection of General Contractor**. **Project Variable** and **Final Stage Variable** fill in automatically. The settings window should look like in fig. 67.

Start Construction
Obtaining Construction Permits
Performing Construction Work
Start Process
Define Process Tender for Selection of General Contractor
Low-Rise Construction of Cottages
×
Project Stage

Fig. 67. Adding a process to a life cycle transition

If there are several one-type variables, you select the one you need in the fields. Click **OK** to save changes. The **Action** column will show a start process note in the **Life Cycle** tab (fig. 68).

Project Type List Low-Rise Construction of Cottages * 3									
🚹 Description 🔲 Attributes 🗐 Table 🐨 Filter 😫 Life Cycle 🔘 Flows (Processes) 🦃 Advanced 🔄 Forms (reresentations) 🦃 Templates 🐯 Scripts									
Allow to change statuses manually									
Initial Stage	Transition	Final Stage	Action	By default					
Draft	Publish Project	Obtaining Construction Permits	Publish		- 💥				
				Yes	+				
Completed					-				
Obtaining Construction Permits	Start Construction	Performing Construction Work	Start Process (Tender for Selection of General		- 🔀				
					-				
Performing Construction Work	Construction Work Completed	Construction Completion and Commissioning	Without processing		- 🔀				
					-				
Construction Completion and Commissioning	Project Completed	Completed	Close (Send to Archive)		- 🔀				
					-				

Fig. 68. Project life cycle. A transition with a business process start

Add business processes to the life cycle transitions in the same way.

6.1.1.5 Configuring Forms

Earlier we added **Customer** and **General Contractor** attributes (para. **6.1.1.1. Creating a Project Type**). To make these attributes available in the web application, configure their display.

Open Forms (representations) tab of the project type page (fig. 69).



Fig. 69. Forms (representations) tab

You can see four default forms in the list of forms. Double click **Create** form to edit it. Form editing window opens in a new **Forms** tab in **ELMA Designer**. Form (in the design view) is to the right; the attributes list is to the left (fig. 70).

Learn more about form designer in **ELMA BPM Platform** quick-start manual. This section describes adding new attributes to the form.

0		ELMA 3.7.3.1371	9			- 🗆 ×
Menu Organizational Structure	Processes Objects	Document Management	Projects Forms	KPI Reports	Scripts Publicati	on Style - MAX 📀
Save Close Form () ()	Column Panel Tab	s Text				
Edit Form	Main Elemen	ts				
Low-Rise Construction of Cottages	- Create 🛛					
Properties		M. Duringh Calification				^
Planned Expenses	T* 🔟 ab 🔺	 Project Settings 				
Planned Income	T* 🔟 🕫	Name *				
Message Channel	T* 🔟 ab					
Folder	T* 🔟 ab	Start Date *				
Budget Folder	T* 🔟 ab	End Date *				
Process Instance						
Time Report Limit	T* 🔟 ab	Manager *			-	₽₽
Calendar						
Personal Calendar		✓ Calendar				
Common Calendar		Calendar				
Comments		Calendar				
Current Plan		N. Advanced sevenses				
Customer		 Advanced parameter 	ers			
General Contractor						
Form Elements						
						.::

Fig. 70. Editing a form

You can add an attribute to the form by dragging it from the side panel to the form and placing them with the cursor. The forms, where you can add an attribute, are highlighted with light green. The suggested adding place is highlighted with dark green (fig. 71).

Low-Rise Construction of Cott	ages - Create* 🛛 🕄			
Propertie	es		An Design to Colline	^
Planned Expenses	T* 🔟 ab		 Project Settings 	
Planned Income	T* 🔟 🔤		Name *	
Message Channel	T* 🔟 🔤		-	
Folder	T* 🔟 🔤		Start Date *	
Budget Folder	T* 🔟 🕫		End Date *	
Process Instance	T* 🔟 🔤	4		
Time Report Limit	T* 🔟 🔤		Manager *	- <i>P</i> +
Calendar	T* 🔟 🔤			
Personal Calendar	T* 🔟 🔤	•	✓ Calendar	
Common Calendar	T* 🔟 🔤			
Comments	T* 🔟 🔤		Calendar	
Current Plan	T* 🔟 🕫			
Customer	T* 🔟 ab		> Advanced parameters	
General Contractor	T* 🔟 🕫	-		
		•		
Form Elem	nents			· · · · · · · · · · · · · · · · · · ·

Fig. 71. Dragging an attribute from the list to the form

The added attribute is shown in the form with all the others (fig. 72).

Low-Rise Construction of Cottag	ges - Create * 🔞			
Properties	3		V Project Settings	
Planned Expenses	T* 🔟 ab		· Project Settings	
Planned Income	T* 🔟 🔤		Name *	
Message Channel	T* 🔟 ab			
Folder	T* 🔳 🔤		Start Date *	•
Budget Folder	T* 🔳 🗗		End Data *	
Process Instance	T* 🔟 ab	4		.9
Time Report Limit	T* 🔟 🔤		Manager *	v 🔎 🖶
Calendar	T* 🔟 ab			
Personal Calendar	T* 🔟 ab	:	Customer	
Common Calendar	T* 🔟 ab			
Comments	T* 🔟 ab		✓ Calendar	
Current Plan	T* 🔳 🕫		Calendar	
Customer	T* 🔟 ab		Calendar	
General Contractor	T* 🔟 ab	-	> Advanced parameters	
Form Eleme	nts			

Fig. 72. An attribute added to the form

Double click the attribute in the form to open its display settings. Check the **Required field** box (means, that the users are unable to create a project, without specifying the customer). Leave the **Read only** box unchecked.

0	[Property] Settings – 🗆 🗙
General Nested Properties Advanced	System
Property Name	Customer
Name on the form *	Customer
Description	
	×
Required field	
Read only	
	OK Cancel

Fig. 73. Attribute display settings

Do not add the **General Contractor** field to the project creation form, because at this step the general contractor is not identified. Next, click **Save** button in the top menu and click **Close** button (fig. 74).

0		ELMA 3.7.3.137	19		- 🗆 🗙
Menu Organizational Structure	Processes Objects	Document Management	Projects Forms	KPI Reports Scripts	Publication Style - MAX 🕗
Save Close Form	Column Panel Tabs	Text			
Edit Form	Main Elements				
Low-Rise Construction of Cottages	- Create * 🔞				
Properties		M. Droject Cettings			^
Planned Expenses	T* 🔟 📣 🔺	 Project Settings 			
Planned Income	T* 🔟 🔤	Name *			
Message Channel	T* 🔟 🗗				
Folder	T* 🔳 🔤	Start Date *			
Budget Folder	T* 🔳 🔿	End Date *			
Process Instance	T* 🔳 ab	Life Date			
Time Report Limit	T* 🔳 🗗 👔	Manager *			- P -
Calendar	T* 🔳 💩 🦳				
Personal Calendar		Customer *			

Fig. 74. Saving and closing the form

After you have closed the form, the **Forms (representations)** tab opens (fig. 69).

Configure the **Edit** form (add both attributes in editing mode) and the **View** form (add both attributes in reading mode).

Save forms to apply changes and then publish the project type (para. **6.1.1.3 Publishing a Project Type**).

6.1.2. Project Roles

User project roles are user groups, created to control their access to different components of **ELMA Projects+**. If you assign roles to users, you can avoid dealing with each user settings individually.

Log in to the web application as the administrator (login – admin, no password by default).

Configure roles in Administration \rightarrow Projects \rightarrow Project Types (fig. 75).



Fig. 75. Administration section - Projects

Select the **Low-Rise Construction of Cottages** project type and open **Roles** tab on the opened configuration page (fig. 76).

← Back	Save	Page Template			9	Adminis	strator	\odot	
Configu	re "Low-Ri	ise Constru	uction	of Cotta	ages"				
General Sett	ings Roles	Stages Time	Report	Permission	s				
Name		Descripti	on						
Project Adm	ninistrators	Users wi	th full acce	ss to the Proj	ject				
Stakeholde	rs	Users wi	th acces to	the project					
Supervisors	;	Users wi	th privilege	d access to t	the project				×
+ Add Role)								

Fig. 76. Configuring a project type. Roles tab

Click **Add Role** to add user roles and enter the role name, mark the permissions available for this role (fig. 77). Click **Add**. Click **Save** button in the top menu.

	Add a role	>	<
Name * Description	Architects		
 Access to Project Administering the pr Add Project Participa Manage Project Participa Manage Project Budget Manage Project Budget View Project Plan Manage Project Plan Manage Project Plan Create Messages in View Project Risks Manage Project Risks 	oject ant ticipants t Iget n Project Information Channel ks		
		Add Cancel	

Fig. 77. Adding a role in the project type configuration

6.1.3. Configuring a Project Type Template

A project type template stores this type's general information (typical project tasks, documentation, risks, etc.). You can configure the project page display format: put important information on the foreground, hide secondary information.

All the projects of one type will be created with a configured template. Thus, they will contain a major part of necessary information.

Open Administration \rightarrow Projects \rightarrow Project Types to configure a project type template (fig. 75). Select Low-Rise Construction of Cottages project type and click Page Template in the top menu of the configuration page (fig. 76).

The project template page opens (fig. 78).

Configure the type Create Project Operations Go to	Administrator ?					
Low-Rise Construction of Cottages (Template)						
You are viewing the template fot the "Low-Rise Construction of Cottages" project type	×					
General information	General information					
Project End Date	No data to display					
Manager	😫 My Project Tasks 📀					
Project Role Stakeholders +: Supervisors +:	Type Priority Subject End Date ~ % No data to display					
Architects +:	Project Tasks from Me					
🛱 Project Plan	Tasks from Me: Active: 0; Overdue: 0					
There is no project plan. You can edit the project plan, or load project plan from a MS Project file	□ Today (0) No data to display					
Project Messages						

Fig. 78. Project template page

6.1.3.1 Configuring a Project Page

Click the gear icon on the project template page to configure the project page template (fig. 79).

Configure the type	Create Project	Operations	Go to			9	Administrator	?
Low-Ris	Low-Rise Construction of Cottages (Template)							
You are view	wing the template	e fot the "Low-Ris	e Construction	of Cottages" project type				\times
🖹 Gene					🜵 Project Risks			
Project End Date					No data to display			
Manager								

Fig. 79. Opening project page template configuration

To apply the changes to all the system users, follow the link to common settings editing (fig. 80).

Low-Rise Construction of Cottages (Template)						
You are viewing the template fot the "Low-Rise Construction of Cottages" project type						
Now you are editing the personal settings. To edit the common settings, follow the link.						

Fig. 80. Opening common settings editing

You can see the list of portlets on the opened page. You can edit the list and the portlets settings (fig. 81).

Low-Rise Construction of Cot	tages (Templat	e)	
You are viewing the template fot the "Low-Rise	×		
General information	Ъ×	😜 Budget	Ъ×
🚊 Project Plan	Ъ×	Project Risks	Ъ×
Project Messages	ЪХ	😫 My Project Tasks	Ъ×
Project Documents	Ъ×	Project Tasks from Me	Ъ×

Fig. 81. Editing project page template

Project plan, budget and project documentation information is the most critical and actual when managing a project. You can rearrange the portlets if necessary (by dragging to the desired position), and add new portlets. To do so, click **Add Portlet** in the top menu. To configure portlets click the spanner icon in the portlet title. Portlet and page configurations are described in **ELMA Help**.

All the changes you make on this page save automatically. To return to the project type template, click **Back** button in the top menu.

6.1.3.2 Configuring the Schedule

Low-rise construction of cottages projects have common stages. Therefore, you can configure the project plan template. If you do so, all the key tasks and milestones will be stored in the plan, and you will only need to enter explicit data: executors, dates, etc.

You can find this setting on the project template page (fig. 78) (**Project Plan** portlet). You can create a project plan in the application (**3.3. Project Plan**) or import a plan from MS Project (**3.1. Integration with MS Project**).

Keep in mind the plan structure (stage tasks, task decomposition, milestones and links between tasks) when configuring a project schedule.

Create a project plan, as described in para. **3.3. Project Plan** and publish it. Click **To Project** button to return to project template editing page.
6.1.3.3 Configuring a Budget

Since "Low-rise construction of cottages" projects have similar stages, revenue/expense items and plan income and payment values, it would be reasonable to configure the project budget template. The template will include all of these elements, which are typical for the projects of this type. You will only need to add fact revenue/expense values.

Assume that the following stages are typical for low-rise construction of cottages:

- Develop and approve project documentation;
- Prepare the construction site;
- Perform construction works;
- Lay external network;
- Perform the site improvements;
- Commission the building.

Revenue/expense values may refer to different budget items on each construction stage. For example:

- Revenue items:
 - Sales revenue;
- Expense items:
 - Pre-project expenses;
 - Land expenses;
 - Project works;
 - Prepare the construction site;
 - Prepare for commissioning.

Before creating project stages, create the required revenue and expense items. Create the items in the **Budget Revenue Item** and **Budget Expense Item** entities.

Go to the **Entities** section in the web application and select **Projects+** \rightarrow **Budget Expense Item** (fig. 82). Click the **Create** button on the opened page. The expense item creation page will open (fig. 83). Enter the item name and click **Save** in the top menu. Create the other revenue and expense items in the same way.

O Dec 23 Wednesday	Administrator
Messages	Entities
arm crm	
Tasks	
Company	Common Module
Calendar	🖬 📴 Documents
O Processes	Processes Projects+
Entities	Budget Expense Item
Documents	🔊 Calendar 🔊 Executor of Complex Project Task Element
Reports	🚺 Human Resource
Administration	Technical Resource
🔊 крі	
Projects	
	Fig. 82. Budget Expense Item entity
Save Cancel	Administrator
Budget Expense	ltem - Add an item
Name *	Prepare the construction site
is a group	🔘 Yes 💿 No
Parent Object	~ Q +
Description	
	Description of Budget Item

Fig. 83. Creating a budget expense item

Configure the project budget on the project template page (fig. 78). Click the **Budget** portlet name, and the project budget page will open (fig. 84). The page contains the budget diagram and the list of plan and fact revenue/expense values (now they are empty).

To Project	Edit	Add	Acti	ons												2	Administrat	or 💌 🕑	•
Project	budget: P	roject - L	_ow-Rise	e Constru	ction of C	ottages (T	emplate	e) - vers	sion 1										
You are vie	wing draft of proj	ect budget: Ve	ersion 1																X
Budget	About the version	Versions																	
2	-	~ (=>	•												Deceml	oer 23, 20	15 - Januar	y 29, 20	016
1																			
0 oecembe	r 2015 Expected I	tevenue	[Expected Expen	5e	Expected Bala	ance) -	(Act	tual Revenue)		Actual Expens	se) —	- Actual Balance					january 2	:016
Subject Revenu	e, Inpayments									Iten	n		Task	Date	Plan 0.00	Fact	Deviation 0.00	Deviation	, %
Expens	es, Outpayment														0.00	0.00	0.00		
Result															0.00	0.00	0.00		

Fig. 84. Project budget page

To configure the project budget, add phases to it. Open the budget editing page (click the **Edit** button (fig. 84)) and then click **Add** \rightarrow **Add Project Phase** in the top menu. A project stage creation window will open (fig. 85). Enter the phase name in the **Name** field and the additional information in the **Description** field. Click **Create** to save the phase and return to the list.

Create Project Phase				
Name *	Develop and approve project documentation			
Description	Preparatory phase. Completed before obtaining construction permits.			
	Create	Cancel		

Fig. 85. Adding a project phase

The phase will be added to Revenue, Inpayments and Expenses, Outpayments (fig. 86).

To Project	Publish	Save Changes	Add	Cancel			Administrato	r 😔 🔅
Project	t budget: F	Project - Low	v-Rise Cor	nstructior	n of Cottages (Template	e) - version	1	
Budget	Advanced							
Subject				1	tem	Task	Date	Plan
⊿ Reven	nue, Inpayments							0.00
Dev	velop and approv	e project documen	tation					0.00
Pre	pare the constru	iction site						0.00
Cor	nstruction works							0.00
Lay	/ external networ	k						0.00
Per	Perform the site improvements 0.00							
Со	Commission the building 0.00							
⊳ Expen	nses, Outpaymen	ts						0.00
⊳ Result	t							0.00

Fig. 86. List of phases

Now add plan values of revenues/expenses for one of the items. A plan value can belong to a particular project phase.

To create a plan value of revenue/expense click $Add \rightarrow Add$ Planned Revenue/ Add Planned Expense in the top menu of the budget editing page (fig. 86). A dialog box for creating a plan value will open (fig. 87). Select a revenue/expense item and phase (optional), enter the plan value name in the **Subject** field and add the required values in the **Totals** field. Click **Create** to save the plan value and return to the budget editing page.

	Create	e Budget Expense Item	×
Item *	Prepare the construct	tion site 🗸 🗸 🕇	
Project Phase	Prepare the construct	tion site	
Subject *	Prepare the construct	tion site	
Totals	Date	Total	
		8,000.00	🥒 🗙
		3,000.00	🥒 🗙
	+ Add Value		
			Create Cancel

Fig.	87.	Adding	a plan	expense
. /		. /		

The plan value will be added to the budget (fig. 88). The dates are not specified in the template, so that it could be done for each project, created by this template.

To Project	Publish	Save Changes	Add	Cancel		9	Administrator	\odot	
Project l	budget: P	roject - Lov	w-Rise Cor	nstruction	of Cottages (Template	e) - version ′	1		
Budget A	Advanced								
Subject				Ite	em	Task	Date	Pla	n
⊳ Revenue	e, Inpayments							0	.00
⊿ Expense	s, Outpayments	s						0	.00
Deve	lop and approve	e project docume	ntation					0	.00
⊿ Prepa	ire the construc	tion site						0	.00
⊿ Pre	epare the constru	uction site		P	repare the construction site			11000	.00
							01/13/2016	8000	.00
							01/13/2016	3000	.00
Const	truction works							0	.00
Lay e	xternal network							0	.00
Perfo	Perform the site improvements 0.00						.00		
Comr	Commission the building 0.00						.00		
⊳ Result	Result 0.00						.00		

Fig. 88. The list of phases with a plan value

In terms of management, working with the project budget is similar to working with the project plan: both have the publishing and versioning mechanisms.

To save the changes, publish the budget version. Click the **Publish** button in the top menu of the budget editing page.

When you create a project by a template, all the created phases, items and plan values of revenue/expense will be added to the project, so that the project manager will be able to manage them. These budget settings can be changed in a particular project, if necessary.

6.1.3.4 Configuring Documents

You can store documents in **Documents** section of the web application. Create a folder for each project in **Shared Folders** \rightarrow **Projects**. A **Project Documents** portlet is on the projects page. It shows the contents of this project folder.

You can configure the structure of project documents on the project template page (fig. 78). Find **Project Documents** portlet on this page and click its name. Create folders and documents, typical for this construction type in the opened window (fig.89). You can design the documents hierarchy, configure access rights to folders and documents, etc. Folders and documents are described in **ELMA ECM+ Application** quick-start manual.

To Projec	Document	Folder	Operations	Selected	Send	Table	Administra	tor	?
	~	~	~	~	~	~			**
(Tem	olate) Low-R	lise Constru	uction of C	Cottages					
Shared F	olders \ Projects \ T	emplates \ (Templ	ate) Low-Rise C	onstruction of Co	ottages				
You can server a	create a document on attached to the do	of the File type by o ocuments you crea	Iragging files fror te.	n File Explorer t	o this page. The	se files will be aut	omatically upload	ed to the	×
Search								Q Sear	ch
Advanc	ed Search								
				Quant	ity 15 🗸	Items found: 5	Pages: 1	S 🕕 🔏	۵
	Name			Author			Created On		
	\(Level u	lb)							
	Payment	Documents		Administra	ator		6/23/2015 11:01	AM	
	Certificate	es of Ttitle		Administra	ator	6/23/2015 2:20 PM			
	🕙 📃 Schemati	c Design		Administra	ator	6/23/2015 2:21 PM			
	🗹 📄 Initial Dat	a for Design		Administra	ator		6/23/2015 2:21 P	М	
	Construct	tion		Administra	ator	6/23/2015 2:21 PM			

Fig. 89. Project documents configuration

After you have completed configurations, return to the project template page. Click **To Project** in the top menu.

6.1.3.5 Configuring Risks

ELMA Projects+ helps you to manage potential project problems and their solutions. Always consider project risks, so that if they occur you can mitigate their effect.

A project type has its most probable risks and risks mitigation.

You can configure risks on the project template page (fig. 78). Find **Project Risks** portlet there and click its name. The risks list will open (currently it is empty).



Fig. 90. Project risks configuration page

The following risks may be typical for Low-Rise construction of cottages:

- Ground condition (e.g. possible landslides)
- Late payments
- Currency rates and fluctuations
- Increase of project resources costs
- Uncomplete or inaccurate project documentation
- Lack of professional resources
- Late delivery of materials, etc.

To add a risk to the list, click **Add Risk** in the top menu of the risks list (fig. 90). A risk creation page opens (fig. 91). Enter the risk name in the **Subject** field; configure the **Importance** field. Enter risk information and mitigation in the **Description** field. Click **Save** to save the risk and return to the list.

Save Cancel	Administrator ?
(Template) Low-Rise C	onstruction of Cottages - Add a risk
Subject *	Late Payments
Importance *	High v
Description	The contract should provide for the possibility of imposing penalties and changes in the conditions of cooperation in the case of late payment.

Fig. 91. Adding a risk

The risk will be added to the risks list (fig. 92). You can delete it, if necessary. To do so, click the cross icon.

To Project	Add Risk		Administrator	9	?
(Templa	ite) Low-Ri	se Construction of Cottages - Risks			
		Quantity 15 v Items for	und: 3 Pages: 1	G	۰
Subject 🔨			Importance		
Lack of Hig Organize in	nly Qualified Hum itial staff training a	an Resources nd build a candidate pool.	High	٨	×
Late Delive The contrac case of late	ry of Materials t should provide f delivery.	or the possibility of imposing penalties and changes in the conditions of cooperation in t	_{le} Regular	٥	×
Late Payme The contrac case of late	nts t should provide fi payment.	or the possibility of imposing penalties and changes in the conditions of cooperation in t	1e High		×



When you create a project with a template, all the risks are added to the project. You can add risks if necessary, while the project progresses.

6.2 Using the Project Conveyor

Earlier we have configured the project conveyor. Now we can use it.

Create a low-rise construction project and see as it moves along the project conveyor.

6.2.1. Creating a Project

Log in to **ELMA** as admin and proceed to **Projects** (fig. 93). Then click **Add Project** button in the top menu.



Fig. 93. The Projects Page

Select **Low-Rise Construction of Cottages** type in the dropdown list in the emerged window and click **Create**.

Create a project		\times
Select a project type		
Low-Rise Construction of Cottages		~
Project		
	Create	Cancel

Fig. 94. Selecting a project type

Specify start and end dates in the opened window; leave the project name unchanged, it is generated automatically.

Save Save and Import	Administrator ?
Create a project: Low-F	Rise Construction of Cottages
✓ Project Settings	
Name *	Cottage Construction ({\$Customer.Name})
Start Date *	06/23/2015
End Date *	06/23/2016
Manager *	Ward Steven (Project manager) 🗸 👱
Customer *	Ormit Ltd 🗸 🗸 🕂
✓ Calendar	
Calendar	💿 Business Calendar 🔵 General 🔵 Personal
> Advanced parameters	

Fig. 95. Low-Rise Construction of Cottages project type creation page

Select the project manager in the **Manager** field. Only the users, included in the **Team members** group are shown in the dropdown list (learn more about user groups in **ELMA Help**).

We added the **Customer** field, which is absent on the project creation page (fig. 2) by default. This field type is **Contractor** (fig. 44), that is why the dropdown list will show contractors from **CRM** section. You can add the required contractor, if it is not in the list. To do so, click the green plus icon. Learn more about client management in **ELMA CRM+ Application** quick-start manual and in **ELMA Help**.

6.2.1.1 Project Calendar

You can select a project calendar in the **Calendar** section on the project creation page (fig. 95). Mark working and non-working days in the project plan schedule. Time intervals affect the working day duration and work breaks (lunch). Thus, executors can receive project tasks only on working days.

Business calendar is a calendar for a year, which includes holidays and non-working days. It is a default calendar for all tasks in **ELMA**.

General calendar considers company needs. You can configure it and use it for projects.

Personal calendar is project specific. When you select it in the project creation form, you can specify working time intervals and non-working days.

Select **Business calendar**. In this case, project activities are performed Monday through Friday, from nine to six (by default). This schedule applies to planning tasks, evaluating resource workload, etc.

Click **Save** on the project creation page. The project page opens (fig. 96). This project applies all project type and project template settings. The project has a generated name; **Project Plan**, **Project Risks** and **Project Documents** portlets contain initial information, **General Information** portlet shows the customer information, etc. The project is at the **Draft** stage, as configured in the life cycle.

Create Task Send Message	Create Document	nge Stage	Operations	Go to	9	Administra	ator	?
Project - Cottage C	ONSTRUCTION	(Vincit) as been crea	ated successful	ly. Project stage:	"Draft"			
You are reviewing a draft of the will become Current and projec	project. To start the p t tasks will be assign	project it mus led to execut	at be published - ors.	choose an approp	riate project stage to do tl Risks	hat. After the p	ublication, proj	ect
Project Stage	Draft	o. +ill 7/1/	2016	C Lack of Highly	uantity 15 👽 Ite Qualified Human Resour	ems found: 3	Pages: 1 High	5
Manager	Ward S.			Late Delivery of Late Payments	of Materials		Regular High	
General Contractor	VIIGR			🗟 My Proje	ect Tasks			\odot
Project Role Stakeholders + : Supervisors + : Architects + :				Type Priority No data to disp	Subject lay		End Date 🔺	%
				Project 🛾	Tasks from Me			\odot

Fig. 96. Project page, created with a template

If you need to change calendar, select **Operations** \rightarrow **Edit** in the top menu.

For example, project works must be performed Monday through Friday, from eight to five. Create a general calendar and switch the project to a new working time pattern.

To create the calendar select **Entities** \rightarrow **Projects**+ \rightarrow **Object Calendar** in the web application (fig. 97). Click **Create** in the top menu on the opened page. Calendar configuration page opens (fig. 98). Enter the calendar name and working time intervals. Click **Save** in the top menu to complete configurations.



	Save	Cancer						P	\odot	
(Calendai	r - Add an	item							
	Name *			Work calendar Lo	w-Rise Constru	ction				
	Working Tim	ne Intervals		Day of Week	Start Date	End Date	Start Time	End Time		
				Monday			8:00 AM	5:00 PM	1	×
				Tuesday			8:00 AM	5:00 PM	1	×
				Wednesday			8:00 AM	5:00 PM	1	×
				Thursday			8:00 AM	5:00 PM	1	×
				Friday			8:00 AM	5:00 PM	1	×
				+ Add Resource						
	Non-Working	g Days		Start Date		End [Date			
				No data to display	/					
				+ Add Resource						

Fig. 98. General calendar configuration

Now return to the project (to change its calendar). Select **Projects** \rightarrow **All** and click **Cottage Construction** in the list (fig. 99).

June 23 Tuesday	Add Project				Ad	ministrator
Projects	Projects					
	Search Object Type All		v		Q s	Search Show only mine
Project drafts	Advanced Search	Desired Stage	Start Data	Quantity 15	Items found: 2	Pages: 1 😳 🗐 🌣
	Apartment Building Construction at 253 Hill Street	Active	9/1/2015	9/22/2016	Active	Administrator
<	Cottage Construction (Vincit)	Draft	7/1/2015	7/1/2016	🖉 Draft	Ward S.

Fig. 99. The list of all projects in the system

Select **Operations** \rightarrow **Edit** in the top menu of the opened project page (fig. 96). Select **General** in the **Calendar** section on the project editing page (fig. 100). Select the calendar, created earlier. Click **Save** in the top menu to return to the project page.

Save	Cancel	Administrator	?
Edit a pr	roject: Pro	ject - Cottage Construction (Vincit)	
V Project S	Settings		
Name *		Cottage Construction (Vincit)	
Start Date *		07/01/2015	
End Date *		07/01/2016	
Manager		Ward Steven (Project manager) 🛛 🗸	
🗸 Calenda	r		
Calendar		🔘 Business Calendar 💿 General 🔘 Personal	
		Work calendar Low-Rise Construction	

Fig. 100. Project editing page. Selecting a calendar

6.2.2. Managing Schedule

After you have created a project, develop a project plan. The plan structure is in the project template, so you can find it in the created project. However, each project has its peculiarities. You should consider them in the plan and pay attention to planning tasks due dates and duration, assigning executors, etc.

To open the project plan, click the **Project Plan** portlet name (fig. 96) or select **Go To** \rightarrow **Project Plan**.

Project plan page, its editing and operations are much as in para. **3.3. Project Plan**.

6.2.2.1 Starting Business Processes in Project Plan

When designing a project plan you may need to include business processes in it. For example, you need to approve the budget after obtaining permits and designing. Budget approval procedure and stages are usually the same for all projects. A budget preparation business process (fig. 101) improves the procedure.

With **ELMA Projects+**, you can start a business process at a certain stage of project plan. To do so, you need to:

- Configure the business process;
- Add the business process start to a project plan stage.



Fig. 101. Budget preparation business process

Business process modeling is described in **ELMA BPM Platform** quick-start manual. Configure the created business process. Add **Starting a Business Process** variable to the list of context variables. Select type All Objects \rightarrow Projects+ \rightarrow Starting a business process (Object). Check Input box for this variable.

	Process List OBudget Process * 8					
	Graphic Model G Context B Performan	ce Matrix 🕥 Metrics and KPIs 👔 Forms				
	Displayed Name	Property Name	Туре	Search	Input	Output
			Workflow Process Instance (Object)			
	UID	Uid	UID (GUID)			
	Project Manager	ProjectManager	User (Object)			
	Chief Accountant	ChiefAccountant	User (Object)			
	Budget	Budget	Attachment (Object)			
1	Project	Project	Low-Rise Construction of Cottages (Project)			
ŀ	Starting a Buisness Process	StartingBuisnessProcess	Starting a business process (Object)		•	

Fig. 102. Configuring a business process context variable

Publish the business process and open project plan editing in the web application. Create a start business process task on the project plan editing page (fig. 10).

In the emerged window, enter a task name in the **Subject** field. Specify the start date and select the business process in the **Process Title** dropdown list.

	Create "Start Business Process" Task	\times
Subject *	Starting business process "Budget Process"	
Start Date	07/28/2015	
Specify Duration		
Duration *	1 day(s)	
Process Title *	Budget Process 🗸 🗸	
	Business processes with the "Start Business Process"-type input variable can be automatically started from the project plan	п
Description		٦
	Create Cano	cel

Fig. 103. Creating a start business process task

Click **Create** to add the task to the project plan.

You can configure links between this task and the preceding/following one in the project plan to set the start of business process (para. **3.3.4. Creating Links**). In this case, the start of the business process depends on the end date of the previous task (fig. 104).

Ealt	a project plan: "Cottage Constructi	on (vincit)", version	2
Plan	More			
+	→ X + Q Q + № <u>н</u>			* +·/× = = *·
No.	Subject	Start Date	End Date	1 13 Jul 2015 Mon 20 Jul 2015 Mon 27 Jul 2015 Mon 03 Aug 20 T_W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F S M T W T F
1	🚊 Obtaining Construction Permits	07/15/2015	07/28/2015	
2	O Starting business process "Budget Process" (Map)	07/29/2015	07/29/2015	Starting business process "Budget Process"
3	⊿ 🚖 Prepare building site	07/30/2015	08/26/2015	Prepare building site
3.1	Perform site engineering work	07/30/2015	08/06/2015	Perform site engineering work
3.2	🛋 Install a fence	08/07/2015	08/12/2015	Install a fence
	🚉 Lay on-site roads			
3.4	🖵 The site is ready for construction			
4	⊿ 🚊 Perform initial construction work		09/21/2015	
4.1	Perform earthwork		09/14/2015	
4.2	🚊 Perform foundation work and build basement	09/04/2015		
4.3	🚊 Install slabs	09/17/2015		
4.4	Initial construction work is completed			
			+	

Fig. 104. Creating links between Start BP task and other project tasks

Publish the project plan to save changes (para. 3.3.8. Publishing a Plan).

6.2.3. Planning Resources

Planning resources is a complicated task. The market does not offer any products to assist with this task. It is even more complicated in terms of a resource pool (for example, portfolio management). You need to combine resources on all the works, complete all tasks and optimize individual workloads.

ELMA Projects+ answers many questions about resource planning:

- Who does what and when?
- What is a workload of a team member?
- Are there project tasks without executors?
- Is the organization capable of taking another project without engaging a subcontractor?
- Is it necessary to employ more people?
- What is the best project sequence with the current capacities?

It is important that an executor is not overloaded when planning projects and due dates and assigning executors. A resource workload bar chart is a useful tool in this case (para. **4.3 Resource Workload Bar Chart**). You can monitor the resource workload on the bar chart and optimize it, by adjusting the project plan. Specify resources (human, material, technical) for each project task, so that the data on the bar chart was correct.

You can configure partial workload, if several people execute the same task. The system allows you to control each team member workload for each task.

You can also manage technical and material resources with **ELMA Projects+**.

Proceed to editing the project plan and open the resource workload bar chart (fig. 35).

Right now, it shows only the human resources (project task executors) (fig. 105).

E	dit a	a project plan: "Cottage Constructi	on (Vincit))", version	2					
	Plan	More								
	+	→ X ◆ Q ⊕ ⊕ ⊡ <u>III</u>				8			+ · / ×	∃ ∃ ▼ .
	No.	Subject	Start Date	End Date	Duration	5	Mon 13 Jul 2015	Mon 20 Jul 2015	Mon 27 Jul 2015	Mon 03 Aug :
					-			5 5 M I W I F 5 5	MIWIFS	5 M I W I
	1	Obtaining Construction Permits	07/15/2015	07/24/2015	8 day(s)	ction Pen	mits 🛛		7	<u></u>
	2	🔿 Starting business process "Budget Process" (Map)	07/27/2015	07/27/2015	1 Day		Starting business	process "Budget Process"	•	
	3	⊿ 🖹 Prepare building site	07/28/2015	08/17/2015	15 day(s)			Prepare building site		
	3.1	🖹 Perform site engineering work	07/28/2015	08/04/2015	6 day(s)		F	Perform site engineering work	·	
	3.2	🚖 Install a fence	08/05/2015	08/10/2015	4 day(s)				Install	a fence
	3.3	🖹 Lay on-site roads	08/11/2015	08/14/2015	4 day(s)					Lay
	3.4	The site is ready for construction	08/17/2015	08/17/2015	1 Day					-
	•			·		•				Þ
		Rogers Alan			8]				
	9	Ward Steven			8]				
	4				Þ	4				Þ

Fig. 105. Resource workload bar chart. Human resources

Configure technical resources control (material and human resources are configured in the same way; it is described in **ELMA Help**). To do so, specify technical resources in the system then involve them in the project plan tasks and optimize the load.

6.2.3.1 Adding a Resource

Select **Entities** \rightarrow **Projects**+ \rightarrow **Technical Resource** to form the list of technical resources (fig. 106).



Fig. 106. Technical Resource entity

Click **Create** in the top menu of the opened page. Resource configuration page opens (fig. 107).

	Save Cancel	Administrator
	Technical Resource - Ad	ld an item
	✓ General	
	Name *	Truck BA746BH
	Payment Rate	30, 00
	Currency	Euro 🗸 🗸 🕇
	Overtime Payment Rate	50, 00
<	Overtime Payment Rate Currency	Euro V Q +
	✓ Calendar	
	Calendar	O Business Calendar 💿 General 🔘 Personal
		Work calendar Low-Rise Construction

Fig. 107. Creating a technical resource

Enter the resource name in the **Name** field; specify the Payment Rate and the Overtime Payment Rate. You can select currency in the dropdown list. If the list is empty, click the green plus icon and add currency information.

Check General in the Calendar section and select Work calendar Low-Rise Construction.

Click **Save** to save changes and return to the list of technical resources (fig. 108).

Technical Resource Path: Entities \ Technical Resource		
Search		Q Search
Advanced Search		
	Quantity	15 🗸 Items found: 3 Pages: 1 🚱 🏟
Name		Calendar
Truck BA746BH		Work calendar Low-Rise Construction 🛛 🖌 🗙
Excavator PH578PT		Work calendar Low-Rise Construction 🖉 🗶
Mobile Crane Grove RT890E		Work calendar Low-Rise Construction 🖉 🗶

Fig. 82. Technical resources list

When the list is completed, return to editing of the project plan (fig. 105).

Open a project task editing and click **Resources** in the top menu (fig. 109). Open **Technical resources** tab in the emerged window (fig. 110).

	Edit a project task	\times
Control Co-Executors	Resources	
Subject *	Perform site engineering work	
Executor	a Ward Steven	
Start Date	07/31/2015	
Specify Duration		
Duration *	6 day(s)	
Completion Rating	0	
Priority *	Regular 🗸	
Category	~ Q +	

Fig. 109. Resources button

		Resources	
Human Resources	Technical Resources	Material Resources	
Name	Lo	ad Value, %	
No data to display			
+ Add Resource			

Fig. 110. Task technical resources

Click **Add Resource** to involve a resource in the task. Select a resource in the dropdown list of the emerged window (fig. 111). The list contains technical resources, added to a respective entity (fig. 108). Specify the resource load in the **Load Value**, % and click **Add**.

	Add a resource
Technical Resource *	Mobile Crane Grove RT890E 🗸 🔍
Load Value, %	25
Load Value, 76	25

Fig. 111. Selecting a resource

Add all the necessary resources in the same way (fig. 112).

Human Resources Technical Resources Material Resources Name Load Value, % Excavator PH578PT 100 Mobile Grape Grave RT890E 25	
Name Load Value, % Excavator PH578PT 100 Mobile Crane Grove RT890E 25	
Excavator PH578PT 100 Mobile Crane Grove RT890E 25	
Mobile Crane Grove RT890E 25	/ ×
	🥖 🗙
Truck BA746BH 50	🥖 🗙
+ Add Resource	

Fig. 112. Technical resources list

Click **Close** in the resources window and save changes.

Now the resource workload bar chart will show technical resources and tasks executors (fig. 113).

Cottage Construction (Vincit) Project Plan - version 4											
	Plan	n About the version Versions									
	÷ •	→ X		*							
N	No.	Subject	Start Date	End Date	n 27 Jul 2015	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 2015	Mon 24 Aug		
		C Obtaining Construction Permits									
		O 👰 Starting process "Budget Process"									
		⊿ 🛱 Prepare building site			ing site	_	_				
		Perform site engineering work					_				
		🚊 Install a fence									
		🚊 Lay on-site roads	08/14/2015								
	3.4	The site is ready for construction سلم									
	4	Perform initial construction work		09/21/2015	4			on work			
	₽	Excavator PH578PT		8 4							
	₽	Mobile Crane Grove RT890E		8— 4—							
	₿	Truck BA746BH		8					-		

Fig. 113. Technical resources on the resource workload bar chart

6.2.3.2 Planning Workload

Plan resource workload with the workload bar chart (fig. 113). The bar chart interface is described in para. 4.3. **Resource workload bar chart**.

There are several ways to control a human resource workload. If the tasks are too many, you can reassign some of them to another executor or change the load value on some tasks. You can control technical resource load value in the same way or add new resources, if the load is too great.

See how to change a resource load value in fig. 109 – fig. 112.

Keep in mind, that tasks due dates directly affect the resource load. Sometimes it is better to extend a task period with the current resources, than add new resources.

With the resource workload bar chart, you can plan resource load within one project. However, in fact several projects may involve a resource. It can be involved in different tasks on different projects. To control such a resource you need to monitor all the projects where the resource is used. Use **ELMA Resource optimizer** to cope with this task.

6.2.3.3 Resource Optimizer

The Resource Optimizer is a tool for planning and optimizing human and technical resources workload. You can monitor:

- Human and/or technical resources on several projects;
- Presence/absence of project task executors;
- Presence/absence of active and/or overdue project tasks;
- Need to add new human or technical resources, etc.

Click **Optimizer** button in the top menu of **Projects** page to open the **Resource Optimizer** (fig.114).

June 24 Wednesday	Add Project							
Projects	Current Projects							
🚅 Project List								
All Main Page Shared Filters Current projects Project drafts Project archive	Quantity 15 Items found: 4 Pages: 1 Image: 1 Cottage Construction (Ormit Ltd) (Obtaining Construction Permits) Ward S. 6/23/2015 - 6/23/2016							
	Equipment implementation for Impact International (Planning and analysis) Shaw S. 5/18/2015 - 9/18/2015							

Fig. 114. Opening the resource optimizer

Click **Add Projects** on the opened page. Select the projects you need in the dropdown list of the emerged window (fig. 115).

Publish	Add Projects Add Resources	Choose Project Plan	Undo		2	Administrator)			
Resour	ce Optimizer									
No projects	No projects are loaded									
	A	dd Projects								
	Specify the projects to be add	led to the resource	optimizer:							
	Cottage Construction (Ormit	Ltd) × Cottage (
Add Cancel										

Fig. 115. Adding projects in the resource optimizer

The projects will be added to the **Resource optimizer**. Click one of them to open the project plan and the resource workload bar chart (fig. 116).

There is one significant difference between a workload bar chart in a project and a workload bar chart in the **Resource optimizer**. The latter bar chart shows all the technical and human resources related to the projects in the **Resource optimizer**.

You can monitor a recourse workload, switching between projects in the panel, above the project plan (fig. 116).

Workload control ways are the same, as in a project. A manager can control resource load values, add new resources (use **Add Resources** button in the top menu), change task due dates, etc.

In the optimizer, you can double click a column on the bar chart to open the resource load window. It shows the list of tasks on all selected projects.

If you change the project plans while working in the **Resource optimizer**, you can publish them. To do so, click **Publish** button in the top menu of the optimizer page (fig. 116).



Fig. 116. Projects, displayed in the Resource optimizer

Resource Load								
Information about the Sha	w Craig resource	load						
From 07/26/2015		to	07/31/2015			Show		
Project	Plan	Task		Start	End	Load		
Equipment implementation for 2 Impact International		Project exe	ecution	7/2/2015	8/24/2015	100		
Equipment implementation for 2 Impact International		Configure	the equipment	7/16/2015	8/4/2015	100		

Fig. 117. The list of tasks, involving the resource

6.2.4. Changing Life Cycle Stages

Return to the project, created with a template (fig. 96). Select **Projects** \rightarrow **All** (fig. 99). **General Information** portlet shows the current project stage. When created, the project has **Draft** stage, according to the life cycle of this project type (fig. 68).

Projects at the **Draft** stage are not active yet. They are not in the active projects list, project tasks are not assigned to executors, etc. A notification with this information is on the project page (fig. 118).

C	Ireate Task	Create Document	Operations	Go to	2	Administra	ator	? 静			
	Project - Cottage	Construction (Vincit)									
	You are reviewing a draft of the project. To start the project it must be published - choose an appropriate project stage to do that. After the publication, project will become Currentr and project tasks will be assigned to executors.										
	General informatio			🜓 Project Ris							
Γ	Project Stage	Draft		Quar	ntity 15 🗸 Iter	ms found: 3	Pages: 1	9			
ľ	Project End Date	from 6/23/2015 🧧 till 6/23/20	16 🖸	Lack of Highly Q	High						
	Manager	Ward S.		Late Delivery of		Regular					
		Business Calendar		Late Payments			High				
	Project Role			🗟 My Projec							
				Type Priority S No data to display	ubject y		End Date 🔨				

Fig. 118. Project draft notification

Select the stage that will publish the project to put it to work. For low-rise construction projects, select **Obtaining construction permits**. Click **Change Stage** on the project page (fig. 96) and select the stage in the emerged window (fig. 119). Click **Change**.

Change the project stage							
Current Stage: Draft New Stage:							
Obtaining Construction Permits	~						
	Change Cancel						

Fig. 119. Changing the project stage

Now the project is published (fig. 68) and the stage is changed. The new stage and the notification are shown on the project page (fig. 120).

Create Task Send Message	Create Document	Go to	ator
Project - Cottage Co	nstruction (Vincit)		
1 The project stage is change	ŭ		
General information		Project Risks	
Project Stage	Obtaining Construction Permits	Quantity 15 v Items found: 3	Pages: 1
Project End Date	from 7/15/2015 🖸 till 3/1/2016 🝳	Lack of Highly Qualified Human Resources	High
Manager	Ward S.	Late Delivery of Materials	Regular
Customer	Vincit	Late Payments	High
General Contractor		🔒 My Project Tasks	
Project Role		Type Priority Subject	End Date 🔺
Stakeholders + : Supervisors + :		No data to display	
T.		🛱 Project Tasks from Me	

Fig. 120. The project at the Obtaining Construction Permits stage

The life cycle continues in the same way. If you need to change the project stage, use **Change Stage** button in the top menu. It will trigger the activity, linked to the life cycle transition.

6.2.5. Project Risks

When you manage a project, always foresee potential complications, which can negatively affect the project. **ELMA Projects+** provides you with a risks management tool.

The project risks are stored in a list on the project page. It is always available to the manager. Each risk has its priority.

Some of the low-rise construction projects risks are on the project page, since they were added to the project template. Select **Projects** \rightarrow **All** and click the **Projects Risks** portlet name. Risk log page opens. You can also select **Operations** \rightarrow **Project risks** to open the risk log page.

To Project Add Risk	ministrator 7 🤔 📻 ($\overline{\bigcirc}$?
Project - Cottage Construction (Vincit)	d: 3 Pages: 1	5	\$
Subject A	Importance		
Lack of Highly Qualified Human Resources Organize initial staff training and build a candidate pool.	High	1	×
Late Delivery of Materials The contract should provide for the possibility of imposing penalties and changes in the conditions of cooperation in the case of late delivery.	Regular	•	×
Late Payments The contract should provide for the possibility of imposing penalties and changes in the conditions of cooperation in the case of late payment.	High	١	×

Fig. 121. Risk log page

Click **Add Risk** to add risks to the list. Adding risks is described in para. **6.1.3.5. Configuring Risks**.

Click a risk name to open the risk page, where you can edit its properties, if necessary (fig. 122).

To Project Save Can	cel Resolve Risk	Administrator								
Cottage Construction (Vincit) - Edit a risk - Late Delivery of Materials										
Subject *	Late Delivery of Materials									
Importance *	Regular									
Description	The contract should provide for the possibility of imposing penalties and changes in the conditions of cooperation in the case of late delivery.									

Fig. 122. Risk page

You can resolve risks while the project progresses, if you mitigate them with **ELMA Projects+** tools.

Click **Resolve Risk** on the risk page (fig. 122) to resolve a risk. Describe the actions and activities you employed to resolve the risk in the emerged window and click **Resolve**. You can also resolve risks on the risk log page. Click the icon to the right of the risk importance. When the risk is resolved, the risk log shows the resolving date and the added note (fig. 123). The risk page editing will be unavailable. You cannot edit resolved risks.



Fig. 123. Risk log with a resolved risk

6.2.6. Project Budget

ELMA Projects+ provides tools for managing the project budget and allows controlling the project revenues/expenses item-by-item. Each project requires a set of phases and items, plan values of revenues/expenses and accounting of fact values of revenues/expenses by fact documents.

When you create a low-rise construction of cottages project, it already has items and some plan values of revenues/expenses, since you have configured them in the project template. Go to the project, created by a template (fig. 96), by selecting it in the **Projects** \rightarrow **All** (fig. 99), and click the **Budget** portlet name. The project budget page will open (fig. 124). You can also open the budget page by clicking **Go To** \rightarrow **Budget**.

The page displays the project budget chart, which reflects changes in fact and plan values of project revenues/expenses over a period. Learn more about the chart in the paragraph **6.2.6.1. Project Budget Chart**.

Below the chart is the summary table with plan and fact values of revenues/expenses, and the automatically calculated financial result.

To Project	Edit	Add	Actions							Admir	nistrator)
Projec	t budget: Pr	oject - Co	ottage Cons	tructio	n <mark>(Vinci</mark>	t) - version 1						
Budget	About the version	Versions										
1	7 🗟 🗸 📋	-					D	ecember	24, 201	15 - Jai	nuary 29, 3	2016
20000 15000 10000												
5000 0 -5000												
-10000)
decem	ber 2015 Expected R Actual Bala	evenue •	Expected	Expense		Expected Balance)	- Actual Re	venue		january Actual Expense	/ 2016
Subject					Item		1	Task		Date	Plan	
⊳ Rever	ue, Inpayments										21500.00	
⊿ Expen	ses, Outpayments										15700.00	
⊿ Per	form the site improv	ements			Perform th	e site improvements					2700.00	
									12/29	9/2015	2700.00	
⊿ Lay	external network				Lay extern	al network					2000.00	
									01/22	2/2016	2000.00	
⊿ Pre	pare the construction	n site			Prepare th	e construction site				20040	11000.00	
									01/1:	3/2016	8000.00	
									01/14	4/2016	3000.00	
De	velop and approve	project docum	entation								0.00	
Pre	pare the construct	ion site									0.00	

Fig. 124. Project budget page

When the project is created, you can edit the budget plan values, if you need to adjust the values to a particular project. To do so, click the **Edit** button in the top menu on the budget page (fig. 124). A budget version editing page will open (fig. 125).

To Project	Publish	Save Changes	Add	Cancel			Admi 🛃	nistrator)
Project k	budget: P	roject - Cot	tage Con	struction	(Vincit) - version 1				
Budget A	Advanced								
Subject				1	ltem	Task	Date	Plan	
⊳ Revenue	e, Inpayments							21500.00	
Expenses, Outpayments 15700.00						15700.00			
⊿ Perfor	Perform the site improvements			I	Perform the site improvements			2700.00	
							12/29/2015	2700.00	
🖌 Laye	xternal network			I	Lay external network			2000.00	
							01/22/2016	2000.00	
⊿ Prepa	re the construct	ion site		I	Prepare the construction site			11000.00	
							01/13/2016	8000.00	
							01/14/2016	3000.00	
Devel	lop and approve	e project documen	itation					0.00	
Prepare the construction site								0.00	
Const	truction works							0.00	
Lay ex	xternal network	t						0.00	
Perform the site improvements								0.00	
Comn	nission the buil	ding						0.00	
⊳ Result								5800.00	

Fig. 125. Budget version editing page

To change a plan value, double click its name. A dialog box for editing this value will open (similar to the one in fig. 88). Edit a plan date of one of the values. To do so, click the \checkmark button to the right of the required value in the dialog box (fig. 126), select the date in the Date field, and click the **Edit** button.

	Edit a value	\times
Date	01/13/2016	
Total	8,000.00	
Reason	Contract No. 13-24 dated 01.12.2016	
Plan Task	No published plan	
	Edit Ca	ncel

Fig. 126. Value editing dialog box

Click the **Save** button in the plan value editing box (fig. 88) to save the changes and return to the budget version editing page (fig. 125). The value date is displayed to the right of the value name in the **Date** column. To apply the changes, publish the current budget version. Click the **Publish** button in the top menu.

The budget is planned at the initial project phases, and the fact values are constantly updated in course of the project. To add fact values of revenues/expenses, click **Add** \rightarrow **Add Actual Revenue/Add Actual Expense** in the top menu of the budget page (fig. 124).

The fact value creation box will open (fig. 127). Select an actual revenue/expense or an item, enter the fact value name in the **Subject** field and the required value in the **Total** field. Specify the revenue/inpayment date. Attach a document, confirming the actual revenue/inpayment. Click **Send** to save the fact value and return to the budget page.

Add a new actual revenue item X						
Budget Revenue Planned Revenue Item *	Sales revenue					
Subject *	Sales revenue					
Total *	6,400.00					
Date	01/29/2016					
✓ Document						
General Information						
Name *	Project revenue {\$FileName} of {\$Document.CreationDate} The document name will be generated from template					
Parent Folder	Shared Folders/Projects/Low-Rise Construction of Cottages/Financial Documents					
Version	Version					
Attach a file from the computer	Attach a file from the scanner") Scan area Get a version file from the scanner. Scanning is performed with ELMA Agent.					
Make it Current? Yes No						
Advanced						
Description						
	Send Cancel					

Fig. 127. Adding an actual revenue

The fact value will be added to the budget (fig. 128) and the chart will adjust to the new data. The document with the data will be created in the project folder.


Fig. 128. Budget with fact and plan values

If you click a fact value in the table, a dialog box (fig. 129) with the information on this item will open. You can edit this item, if necessary.

		\times					
				Quantity: 15	✓ Items found: 1	Pages: 1	G
Subject	Name	Total	Author	Planned Revenue Item	Date created	Date	
Sales revenue	Project revenue of 1 2/24/2015 11:34 AM	6,400.00	Administrator	Sales revenue	12/24/2015 11:34 AM	1/29/2016	

Fig. 129. Fact value information

By default, budget versions can be published and edited by all the users, who have the permissions to do so. ELMA Projects+ allows approving project budget versions. This function is similar to project plan approval, described in the paragraph **8.3 Approving a Project Plan**.

You can also create a report on the project budget, which would contain the list of all the items values (plan and/or fact) over a period. The report can display plan and fact values together or separately.

You can find more information on the ELMA Projects+ application in ELMA Help.

6.2.6.1 Project Budget Chart

Project budget chart is a graphical representation of fact/plan values of project revenues/expenses over the selected period.

The budget chart consists of points (table row values), which are placed along the time axis and connected to each other. The points can be above or below the zero line, depending on the value type (revenue/expense). The revenue values are above and the expense values are below. Each point represent a separate plan/fact value of the project revenue or expense at a given time.

Points from one table row are connected with a dashed or full line of a particular color. These lines reflect the value changes dynamics. The current time is marked on the chart with a green vertical line.

When you mouse over one of the points, a popup is displayed. It contains the information on plan/fact values of revenues/expenses on the selected date (fig. 130).



Fig. 130. A popup on the budget chart

When you click one of the points, the plan/fact value in the table below are filtered for this date (fig. 131).

Projec	ct budget: Project - Cot	tage Construction (Vinci	it) - version 3	3			
Budget	About the version Versions						
8	78 v 18 v 🔿 🔹			🖮 Octo	ober 1 - De	cember 31,	2015 🔶
		Budget for the period	from 1/1/2016 to 1/	/31/2016			
Subject	t	Item	Date	Plan	Fact	Deviation	Deviation, %
⊳ Reve	enue, Inpayments			26250.00	6400.00	-19850.00	-75.62%
⊿ Expe	enses, Outpayments			13000.00	10700.00	-2300.00	17.69%
⊳ La	ay external network	Lay external network		2000.00	0.00	-2000.00	100.00%
⊿ Pr	repare the construction site	Prepare the construction site		11000.00	10700.00	-300.00	2.73%
			01/06/2016	8000.00	7600.00	-400.00	5.00%
			01/14/2016	3000.00	3100.00	100.00	-3.33%
De	evelop and approve project docu			0.00	0.00	0.00	
Pr	repare the construction site			0.00	0.00	0.00	
Co	onstruction works			0.00	0.00	0.00	
La	ay external network			0.00	0.00	0.00	
Pe	erform the site improvements			0.00	0.00	0.00	
Co	ommission the building			0.00	0.00	0.00	
⊳ Resu	ılt			13250.00	-4300.00	-17550.00	-132.45%

Fig. 131. Data table. Filtering by date

The **legend** is below the budget chart. It contains the rows headers and their graphic representation on the chart. The plan/fact balance is calculated by the formula "**Planned/Actual Revenue** \rightarrow **Planned/Actual Expense**".

You can hide some of the rows on the chart, if necessary (fig. 133). To do so, click the name of the required row in the legend (the selected name will be highlighted grey).



Fig. 132. Budget chart with hidden rows

When working with the budget chart, you can use the toolbar buttons (fig. 133).



Fig. 133. Budget chart toolbar

Chapter 7. Managing Internal Projects

Projects are divided into two groups: **external projects** (oriented towards external customer) and **internal projects** (oriented towards developments within the organization).

Chapter 6 describes the project conveyor, using an example of external project. It focuses on project plan management, resource management, budget and risks management. Conveyor configurations are different in case of internal projects.

A company funds its internal projects, which develop the company itself. Project stages control is important for internal projects, but these stages can vary from project to project. That is why we do not recommend configuring life cycle as in para. **6.1.1.2. Configuring Life Cycle**. You can use the default life cycle.

You can put project documents, project plan and project time reports to the foreground in the project template (para. **6.1.3. Configuring a Project Type Template**). It is important, how many resources the company spends on the project. Section **8.1 Time Report Limit** describes managing the time report limit.

When you manage internal projects, you have to record the knowledge acquired while executing a development project. To do so, you can set up a business process start on the project page. It will start, when needed. Include an activity of information recording to information resources (e.g. Knowledge Base) in the process map. This function is described in section **8.2. Starting Business Processes on Project Page**. You can also configure the life cycle, so that the process started automatically, when the project is finished (para. **6.1.1.2. Configuring Life Cycle**).

In general, you manage internal project activities with the project conveyor, but the execution details are not the same, as in external projects.

Chapter 8. ELMA Projects+ Additional Features

Previous chapters describe **ELMA Projects+** project management functions and the **Projects conveyor** concept. However, apart from these functions, you often need to cope with specific, less important tasks. After you have completed the general project tasks, you can focus on small details. That is why a flexible solution is better for the end user. This chapter describes features that can improve the main function and make it more convenient to use.

8.1 Time Report Limit

When a project progresses you often need to record the time spent on the project execution as well as the financial expenses. Companies often estimate the execution value in time spent. Therefore, it is important to compare planned time spent (configured when planning the project) and factual time spent (becomes known after the project has been finished).

Each team member can submit task time reports. This process is much as submitting time reports on user tasks in **ELMA**. It is described in **ELMA Help** and **ELMA Web Portal** quick-start manual. You can use project time reports full functionality after you have configured objects of time reports and activities. These configurations are described in **ELMA Help** and **ELMA Web Portal** quick-start manual.

A project manager can control project time reports with a respective portlet. You can add the **Project Time Report** portlet to the project page (fig. 134).

Project - Cottage Co	nstruction (Vincit)					
General information		Project Time	Report		يکي	\odot
	Obtaining Construction Permits			2	Group by Exect	utors
		Occupation	Pending Approval	Approved	Rejected	
Project End Date	from 7/15/2015 💟 till 3/1/2016 💟	External Works	40 hour(s)	136 hour(s)	0 m.	
Manager		Total	40 hour(s)	136 hour(s)	0 m.	
	Vincit	Time Planned : 0 n	n.			
General Contractor		Project Risks				
Project Role			Quantity 15 🗸	Items found: 3		G
	iks T.	Lack of Highly Qual			High	
		Late Delivery of Mat		Regular		
					High	

Fig. 134. Project Time Report portlet on the project page

You can limit time reports, i.e. the number of hours one can spend on project activities.

To do so, you need to allow limiting project time reports. Select **Administration** \rightarrow **Projects+** \rightarrow **Project Types** (fig. 75). Select **Low-Rise Construction of Cottages** type and open **Time Report** tab (fig. 135).

← Back	Save	Page Tem] plate					Adminis	strator	\odot	
Configur	re "Low-Ri	ise Cor	nstructior	n of Cotta	ges"						
General Setti	ngs Roles	Stages	Time Report	Permissions							
Y Time F	Report Limit										
Allow to lim	it project time rep	ports									
Y Time F	Report Approver	r									
Assign the	user to approve p	project time	reports. If this f	ïeld is left empty	, the time repo	ts will be sent i	for app	proval to to	the projec	t manag	er.
Ward Stev	en (Project mana	ager)	~ 1								

Fig. 135. Project type configurations. Time report tab

Select **Yes** in the **Time Report Limit** section. In the **Time Report Approver** section, you can also assign the user, who will approve time reports on this type of projects by default.

The project manager can set time report limit on the project page. To do so, select **Operations** \rightarrow **Time Report Limit** in the top menu of the project page (fig. 136).

Create Task Send	Message Create Document	Change Stage	Operations	Go to			Wa	ord S.	?
Project - Co	ttage Construct	ion (Vincit)	🖍 Edit 🚴 Change Ma	anager					
General in			📳 Export Proj	ect	Project Tim				
Project Stage		aining Construction	🕒 Time Repo	rt Limit				🍰 Group	by Executors
			Roles		Occupation				Budget
	from	7/15/2015	Desired Ass	Demissions	External Works	40 hour(s)	136 hour(s)		0 m.
Manager		d S.	FIDJELL ALL	ess Fernissions	Total	40 hour(s)	136 hour(s)	0 m.	0 m.
	Vinc	it.			Time Planned : 0	m.			

Fig. 136. Opening time report limit editing

Click **Add Time Report Limit** on the opened page (fig. 138). Specify the time limit and the occupation in the emerged window (fig. 137).

	Edit a time report limit	>
Occupation *	External Works	
Time Limit	50 v day(s) 0 v hour(s) 0 v	min(s)
Do not fill in the	Time Limit field if this occupation has no project time report lim	its
Do not nin in the		
	Add	Cancel

Fig. 137. Adding a time report limit

Click **Add** to add the limit to the list (fig. 138). Click **Save** in the top menu of the time report limit page to save changes.

To Project	Save	Ward S.	9
Cottage	Construct	ion (Vincit) - Project Time Report Limit	
Occupation		Time Limit	
External Work	s	400 hour(s)	/ ×
+ Add Time	Report Limit		

Fig. 138. Configuring a time report limit

The time report limit is now in the **Budget** column of the **Project Time Report** portlet. Tasks executor will not be able to exceed this limit.

Time limits are grouped according to their activity types in fig. 134. You often need to monitor time reports according to the executors. To do so, click **Group by executors** in the **Project Time Report** portlet. Now the portlet information looks like in fig. 139.

Create Task Send Message	Create Document	Change Stage	Operations	Go to			Ward S.	? 💀 💭
Project - Cottage Co	onstructi	on (Vincit)						
General information					🕒 Project Tim	ne Report		ی 🖋
			Pormite				X	Group by Occupations
		ing construction			Executor	Pending Approval	Approved	Rejected
Project End Date	from 7	//15/2015 🧕	till 3/1/2016 🧕 💽		Brooks Tom	0 m.	80 hour(s)	0 m.
Manager					Ward Steven	40 hour(s)	56 hour(s)	0 m.
					Total	40 hour(s)	136 hour(s)	0 m.
	Vincit				Time Planned : (0 m.		

Fig. 139. Grouping time reports by executors

8.2 Starting Business Processes on Project Page

ELMA Projects+ executes typical project procedures as business process instances. This quick-start manual described the business processes that start when project stages change (para. **6.1.1.4 Modeling Project Processes**) and the business processes that start at a certain step of project progress (para. **6.2.2.1 Starting Business Processes in Project Plan**).

You cannot always predict when you are going to need to start a process (if at all) in a project. With **ELMA Projects+,** you can start a process manually on the project page if necessary. Configure the business process and the project type to add this function.

Suppose, that the project has a time report limit (configured, as in para. **8.1 Time Report Limit**). It is possible, that the project is still active, but it reached the time report limit. In this case, a company should make a decision: whether to continue the project and under what conditions; how many resources can the company spare on this project. Implement this logic: If the time report limit is reached, but the project is active, the project manager can start **Request for Overtime** business process.

A simplified map of this business process is in fig. 140. The initiator (project manager) forms a request; the CEO approves the overtime. If the overtime is approved, the initiator's manager, authorized to edit the time report limit, makes the changes.

The context of this process must have an input context variable with **Project** type (fig. 141).



Fig. 140. Request for Overtime business process map

Process List Request for Overtime * 3									
Graphic Model Context & Performan	nce Matrix 🕥 Metrics and KPIs 👔 Forms	Scripts 🖞 Settings 🔂 Version History 】	Policy						
Displayed Name	Property Name	Туре	Search	Input	Output				
Process Instance	WorkflowInstance	Workflow Process Instance (Object)							
Unique Identifier	Uid	UID (GUID)							
· Initiator	Initiator	User (Object)							
· Extra Hours (Requested)	Extra Hours Requested	Integer							
· Extra Hours (Allocated)	Extra Hours Allocated	Integer							
· Reason	Reason	Text							
Comment	Comment	Text							
Project Manager	ProjectManager	User (Object)							
Project	Project	Base Project Type (Object)	✓	✓					

Fig. 141. Request for overtime process context

Select **Save** \rightarrow **Publish** to publish this business process (fig. 66) (learn more about this operation in **ELMA BPM Platform** quick-start manual).

Next, add the business process to the Flows list of the project type. Open the **Flows** (**Processes**) tab on the project page and click **Add** in the top menu (fig. 142). Select the business process in the opened window and click **OK** (fig. 143).

Menu	Organiz	ational Structure	Processes	Objects	Document Management	Projects	KPI Rep	orts Scrip	ots Publica	tion	Style	- MAX (?)
-Save	Add De	siele										
General	Flows											
Pro	ject Types			Project T	ype List 😑 Low-Rise C	onstruction	of Cottages 🛛					
B- 🔔	All Project T	ypes		i Descript	on 📕 Attributes 🔲 Ta	ble 🖓 Filt	er 📑 Life Cycle	🕒 Flows (l	Processes)	Advanced		∢ ▶
	Low-Rise	e Construction of C	Cottages	Name	V	ersion A	uthor	P	ublished On	Pn	oject	
L	🔹 Project											
	Recycle Bin											

Fig. 142. Project type page. Flows (Processes) tab

0	Select Process		-		×
Name		Author			
Request for Overtime					
Incident Handling					
🔘 Update Project Status					
			_		_
	C	ок		Cano	el:

Fig. 143. Project type flow selection window

Publish the project type after you have made the changes (para. **6.1.1.3 Publishing a Project Type**).

Start Process button is now on the project page in the top menu (in web application) (fig. 144).



Fig. 144. Start Process button on the project page

Click the button and specify the process instance name and the process in the emerged window. Click **Send**. The process is started and the first task is assigned to its executor.

Start a business process					
To start a process, select one, enter the instance name and press Er Send Process Instance Name *	iter or	click			
Request for overtime for project {\$Context.Project.Name}					
Process *					
Request for Overtime	\sim				
_					
Send		Cancel			

Fig. 145. Start a business process window

Using this process implies, that the process **Initiator** is not authorized to edit the time report limit, but the **Initiator's Manager** is. You can configure these permissions in the project type configurations (fig. 75) in **Permissions** tab (fig. 146). Click **Save** in the top menu to apply changes.

	← Back	Save	Page Ten) iplate		9	Administra	tor	9				
(Configure "Low-Rise Construction of Cottages"												
	General Sett	ings Roles	Stages	Time Report	Permissions								
	🗸 Permis												
	Define a list of the users who can create projects + Add												
	 Permissions to accept project plan 												
	Define a list of the users who can accept project plans ➡ Add												
J	✓ Permissions to accept project budget												
	Define a list of the users who can accept project budgets Add												
	🗸 Permis	✓ Permissions to edit time report limit											
	Define the X 2 W Add	Define the list of the users who can edit time report limits											

Fig. 146. Project type configuration. Permissions tab

8.3 Approving a Project Plan

All authorized users can publish and edit a project plan. With **ELMA Projects+** you can implement project plan approval. With ELMA Projects+, you can approve project plans.

Open **General Settings** tab (fig. 147) in the project type configuration (fig. 75) to configure project plan approval.

Back Save Page	Template
Configure "Low-Rise (Construction of Cottages"
General Settings Roles Pha	ses Time Report Permissions
✓ Approve Project Plan	
Send a project plan for acceptance Always	e before publication
> Approve Project Budget	
✓ General Project Tasks Sett	ings
Show to executors all tasks that w start in (days)	III Executors will see the project plan tasks in days before their actual start dates
Consider links between project pi tasks	an OYes ONA If "Yes", project plan tasks will be created only after previous plan tasks are completed. Also, if all previous tasks are completed, the "Start Business Process" task will be completed before it's scheduled start date.
✓ Task Highlight Settings	
When the specified percentage o	the task time limit is overdue, the task will be highlighted in the project plan

Fig. 147. Project type configuration. General Settings tab

Select **Always** in the dropdown list of the **Approve a project plan** section. It means that every time you publish a project, it needs to be approved.

Specify plan approval permissions in the **Permissions** tab of the project type configuration (fig. 146).

Click **Save** in the top menu after you have made the changes.

After these changes, publishing a plan will be unavailable on the project plan editing page. The top menu will display the **Send for Approval** button (fig. 148).

To Projec	tt Send for Approval						ninistrator	
Edit a	a project plan: Cottage Construct	tion (Vincit	:), versio	on 5				
Plan Advanced								
+	◆ X ◆ Q ④ ⊕ ⊵3 <u>II</u>			8		+ - /	XEET	· •
	Subject	churt Durte	End Date	Mon 21 Dec 2015	Mon 28 Dec 2015	Mon 04 Jar	n 2016 Mon 11	Jan 1
NO.	Q,	Start Date		M T WOT F	5 5 M T W T F 9	5 S M T W	T F S S M T V	NT
1	⊿ 🖹 Perform initial construction work	12/24/2015	02/03/20	on work				
1.1	🚖 Perform earthwork	12/24/2015	01/06/20	rthwork				
1.2	🚖 Perform foundation work and build base	01/07/2016	01/13/20	Perfor			*	
1.3	🚖 Install slabs	01/14/2016	02/03/20					- i
2	Initial construction work is completed	02/03/2016	02/03/20					

Fig. 148. Project plan editing page. Send for Approval button

Click this button and select the user, who will approve the plan, in the emerged window (fig. 149).

Send for Approval									
То *	Walker Scott (Head of Project Office)	1							
Start Date *	12/24/2015 🔲 🗌 Specify time								
End Date *	12/24/2015 🔲 🗌 Specify time								
Comment:									
	Send	ancel							

Fig. 149. Sending a project plan for approval

After you have clicked the **Send** button, the project plan page shows a new **Pending Approval** status (fig. 150).

То	P roject	Edit	Actions							Administrator	\odot
Cottage Construction (Vincit) Project Pland - version 6						Pending Approva	al (Walker S.)				
P	Plan IDE About the version Versions										
4	+ +	X \$ 9,	$\bigoplus_{k} \bigoplus_{k=1}^{k} \bigoplus_{k=1}^{k}$	<u>ıh</u>			\$				▼ -
N	lo	Subject			Start Date	End Date	Mon 21 Dec 2015	Mon 28 Dec 2015	Mor	n 04 Jan 2016	Mon 11 Jan :
		Q,			Stare Bate	End bate	M T WOD F S S	MTWTFS	SM	TWTFSS	MTWT
1	L	a 🚖 Obtain constr	ruction permits		12/24/2015	02/03/20	n work				

Fig. 150. Pending approval project plan page

The approver will receive a respective task (fig. 151). The task page contains all the necessary information. The approver makes a decision with **Approve** and **Reject** buttons in the top menu.

Approve Reject	Actions	Walker S.
Approve Project Plan	Opening the branch office Berlin	
About Task		
End Date	from 12/24/2015 📮 till Today (12/24/2015) 📮	Author
Project	Cottage Construction (Vincit)	Administrator
Project Plan	Version 6 (Version No.6) 🖋	Executor
Plan Version	6	Walker S. Head of Project Office
Comments Questions	Attachments 🖹 Actions Sort by Date	Date created
Task created (Administra	tor 12/24/2015 5:08:30 PM)	Status New

Fig. 151. Project plan approval task

If the project plan is rejected with the **Reject** button, the project plan page will display the **Send for Approval** button (fig. 148).

If the plan is approved with the **Approve** button, the project plan page will display the **Publish** button, so you can publish the plan (fig. 152).

To F	Project	Publish	Edit	Actions					5		Administrator	\odot	
Сс	Cottage Construction (Vincit) Project Plan - version 7 Approved (Walker S.)												
Yo Th	u are vi e projec	ewing the approv ct plan has unpub	ved version of the lished tasks. All ch	project plan: Vers anges will be ap	sion 7 plied to the tasks o	nly after the	project plan is publisł	hed.					×
Pla	an II	DE About the	version Version	IS									
										-			
N	0	Subject			Start Date	End Date	Mon 21 Dec 2015		Mon 28 Dec 2015	M	lon 04 Jan 2016	Mon	11 J
		Q			Start Date	Ena Date	M T WOD F S	S	MTWTFS	SM	TWTFS	SMT	w
1		a 🚖 Obtain con	struction permits		12/24/2015	02/03/20	on work	_				_	

Fig. 152. Approved project plan page

Chapter 9. Useful References

Along with **ELMA Projects+** quick-start manual, the following sources describe the functions of **ELMA** applications:

- User Manual of **ELMA BPM Platform**
- User Manual of **ELMA Web Portal**
- User Manual of **ELMA ECM+**
- User Manual of **ELMA CRM+**
- User Manual of **ELMA KPI**

General description and purchase conditions of the applications are available at **ELMA website:** <u>http://www.elma-bpm.com</u>. You can also **Ask a question** on this website, using a respective link.

An **Online Demo** <u>http://demo.elma-bpm.com/</u> 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** system 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**: <u>https://store.elma-bpm.com/</u>.

If you are experiencing technical difficulties, please visit ELMA technical support website: <u>http://support.elma-bpm.com</u>.

If you need assistance with the system or have questions about partnership with ELMA Company, contact us:

Luxemburg: + (352) 20-30-11-40
 <u>http://www.elma-bpm.com/about-us/</u>