ELMA Projects+ User Manual





Business Process and Performance Management System

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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 O 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**.

▶ ► → Project Back Next					Administrator
nport a project - Apartn	nent Building (Constructior	n at	253 Hill Street (Ve	ersion №1) - Step 2
asks where executor is not found Re	source Conflicts War	nings Detailed In	forma	tion	
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	8 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).

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Previ	ew an imported project task plan. If you want to chang	e something, ret	urn to Step 1 or S	Step 2 to change	e the	project import data.				×
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1	⊿ 🚍 Prepare building site	08/10/2015	08/25/2015	12 day(s)		Star	t			-
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	09/21/2015	09/21/2015	1 Day						
3	\blacksquare 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)						+
4					•	4				•

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).

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: Version 1 The project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Project plan contains unpublished tasksAll changes will be applied to the tasks only after the project plan is published. Subject Project plan: Version 1 Subject Project plan is published. Start Date Puration Executor I • • • • • • • • • • • • • • • • • • •	9	Administrator ?
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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.

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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).

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par	tment Building Construction at	253 Hill S	treet Proj	ect Plar	ı - ve	rsion	1														
	e viewing a Draft of the project plan: version 1 ject plan contains unpublished tasks. All changes wil	l be applied to th	e tasks only afte	r the project	olan is p	ublished	I.														>
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1	Hold a meeting on the project initiation	08/05/2015	08/06/2015	Hold a	meeting	on the	proje	ct initi	ation				٦.								Ê
2	Approve the project documentation	08/07/2015	08/11/2015		Арр	rove the	e proj	ect do	cumer	ntati	ion			_							
2.1	🚊 Obtain construction permit	08/07/2015	08/07/2015			Obt	tain d		ction	per	mit		ň-		h						
2.2	a Approve construction documentation	08/10/2015	08/11/2015			Ар	prov		tructio	on d	locu	men	tatio		ľ	<u></u>	Ь				17
3	▲ ➡ Prepare building site	08/12/2015	08/25/2015								Pre	pare	e bui		; site	a			×,		۰.
3.1	Perform site engineering work	08/12/2015	08/19/2015						Perfo	m	site	eng	inee		work	¢	ľ			_	-
3.2	🚖 Install a fence	08/20/2015	08/25/2015																	Insta	all
3.3	Lay on-site roads	08/20/2015	08/25/2015																Lav		-si
3.3																					

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).

dit a	a project plan: "Apartment Build	ling Cons	truction a	at 2	53	Hill S	tre	eet'	", י	ver	si	on	1													
an	More	0																								
-	→ X ◆ Q ⊕ ↔ ⊱3 <u>III</u>															÷	•	í		3	C	-			1	r
۱o.	Subject	Start Date	End Date	27	Jul 20	15		Mon	03	Aug	201	5		Mon	10	Aug	20)15			Mo)n 1	17 A	ug :	201	15
10.	Q,	Start Date	Enu Date	r v	νт	FS	s	М	. N	νт	F	S	s	М	r	V	r	F	s	s	м	Т	w	Т	F	-
	🚖 Hold a meeting on the project initiation	08/05/2015	08/06/2015	on	the pr	oject ini	tiati	ion	[]															
	⊿ 🚖 Prepare building site	08/10/2015	08/26/2015					Prep	are	build	ding	site						ę	_							9
.1	Perform site engineering work	08/10/2015	08/17/2015			Perfo	rm	site e	ngi	neeri	ng 1	vork						Ľ,								
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.3	🚖 Lay on-site roads	08/21/2015	08/26/2015																	/ or	n-sit	e ro	ads	ò	Г	-
.4	The site is ready for construction	08/26/2015	08/26/2015																т	he	site	is r	read	y fo	r co	on
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.1	Perform earthwork	08/31/2015	09/14/2015																							
.2	Perform foundation work and build base	09/04/2015	09/17/2015																					Pe	rfor	rm
.3	☐ ☐ Install slabs	09/17/2015	09/21/2015																							
.4	Initial construction work is completed	09/21/2015	09/21/2015																							
	Perform construction work above ground le		02/22/2016																							

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	o Projec	t Publish Save Cancel					5	and the second s	Ac	Iministrator	\odot	?
E	dit a	n project plan: "Apartment Build	ding Cons	truction a	nt 253 Hill Street	", version 1						
	Plan	More										
	-	• I • Q • + 55 <u>II</u>			8			÷	•	/ × = =	9 1	
	No.	Subject	Start Date	End Date	Mon 03 Aug 2015	Mon 10 Aug 2015	M S M			ect Task		g 201
	1	Hold a meeting on the project initiation	08/05/2015	08/06/2015						stone t Business Process		
		a 🚉 Prepare building site				_	-					
		🚖 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

Edi	a project plan: "Apartment Buil	ding Cons	truction a	t 253 Hill Street	t", version 1				
Plar	More								
+	→ X + Q ⊕ + ⊱3 <u>III</u>					+ / /	× Ξ	ΞŦ	•
No.	Subject	Start Date	End Date	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 20)15	Mon 24 Au	Jg :
NO.	Q	Start Date	Enu Date	M T W T F S S	M T W T F S S	MTWT	FSS	MTW	т
1	Hold a meeting on the project initiation	08/05/2015	08/06/2015	tion					-
2	▲ ⊇ Prepare building site	08/10/2015	08/26/2015	Prepare building site	/		_		
2.1	🖹 Perform site engineerin 🔤 1 selected node	08/10/2015	08/17/2015	site engineering work					
2.2	🚖 Install a fence	08/18/2015	08/21/2015		Install a fence				
2.3	🚖 Lay on-site roads	08/21/2015	08/26/2015			n-site roads			
2.4	The site is ready for construction سلم	08/26/2015	08/26/2015			site is ready for	constructi	on 🔶	
3	Approve the project documentation	08/06/2015	08/10/2015	entation					
4	▲ 🚖 Perform initial construction work	08/31/2015	09/21/2015			F	Perform ini	itial constru	
4.1	🚖 Perform earthwork	08/31/2015	09/14/2015					Perform	

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	Edit a	a project plan: "Apartment Bui	lding Constructi	on a	at 253 Hill Street"	', version 1	
	Plan	More					
	+	→ X ◆ Q ⊕ ↔ 5=3 <u>III</u>			8		+• / × = = • •
	No.	Subject	Start Date End D	ate	-	Mon 10 Aug 2015	Mon 17 Aug 2015 Mon 24 Aug 2015 M T W T F S M T W T
	1	Hold a meeting on the project initiation	08/05/2015 08/06		tion		
	2	Approve the project documentation	Add		Project Task		
	3 3.1	Prepare building site Perform site engineering work	Edit	1	Milestone	_	
J	3.2	🚖 Install a fence	Resources Delete Task(s)		Start Business Process	Install a fonce	
	3.3 3.4	Lay on-site roads The site is ready for construction	Transform to Milestone		Successor Task	Project Task Milestone	v for construction
	4	Perform initial construction work	Edit Dependency Delete Dependency		Predecessor Task	Start Business P	
	4.1	🚖 Perform earthwork	Highlight Task	15			Perform
	4.2 4.3	Perform foundation work and build b Install slabs	Show Task in Diagram	15			Perform foundation work
	4.3	Initial construction work is completed	09/21/2015 09/21				•
	•			×	4		Þ

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-Executors	Time Report Limit Attachments Resources	
Subject *	Obtain construction permit	*
Executor	 No executor Select (Manager, Assign to Me) 	
Start Date	Transform to Stage Task	
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		Ŧ
	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.

Plan	More							
+	→ X ◆ ⊖, ⊕, ⊕ ⊱=; <u>I</u>	<u>h</u>						
No.	Subject		Start Date	End Date				
140.	Q,		Start Date	Life Date				
1	🚖 Hold a meeting on the project initia	ation	08/05/2015	5 08/06/2015				
2	⊿ 🖺 Approve the project documentation	1	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 wo	Add	>/17/2015					
3.2	🚖 Install a fence	Edit		3/21/2015				
3.3	🚖 Lay on-site roads	Resourc	ces	3/26/2015				
3.4	The site is ready for construc	Delete 1	ask(s)	3/26/2015				
4	🔺 🚉 Perform initial construction wor	Transfor	m to Stage Task	/21/2015				
4.1	Perform earthwork	Edit Dep	pendency	/14/2015				
4.2	Perform foundation work an	Delete [Dependency	/17/2015				
4.3	🚖 Install slabs	Highligh	nt Task	>/21/2015				
		Show Ta	ask in Diagram	•				

Fig. 15. Transform to stage task

E	Edit a	a project plan: "Apa	rtment Build	ling Co	onst	ruction a
	Plan	More				
	← ·	→ エ ≎ ♀ ⊕ ⊕				
	No.	Subject		Start Date	e	End Date
	1	Hold a meeting on the pr	oject initiation	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	🔺 🚉 Prepare building site	Delete Task(s)		15	08/26/2015
	3.1	韋 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	/ Þ	15	08/26/2015
	3.4	The site is ready کر	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.



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).

lan	More						
(=	→ X + Q Q + ⊡ <u>h</u>					+ · / ×	8 8 T
	Subject			on 27 Jul 2015	Mon 03 Aug 2015	Mon 10 Aug 2015	Mon 17 Aug 2
lo.	Q	Start Date	End Date	T W T F S S	M T W T F S S	M T W T F S	S M T W T
	$\dot{\Xi}$ 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	Approve construction documentation	08/10/2015	08/11/2015	Approve constru	iction documentation		
	a 🚔 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						
.4	💤 The site is ready for construction						
	⊿ 🚖 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 \bigcirc 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).

lan	More				
←	→ X ◆ Q ⊕ ⊕ ⊡ <u>II</u>			8	+• / × 8 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 M S M T W T F S M T W T F S M T W T F S M M T W T F S S M
	⊿ 🚔 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	
	🚔 Install a fence	08/10/2015	08/13/2015	Install a fence	
	🚉 Lay on-site roads	08/10/2015	08/13/2015	Lay on-site roads	0
3.4	The site is ready for construction	08/18/2015	08/18/2015	The site	From:Perform site engineering work - End
4	\blacksquare Perform initial construction work				To: Lay on-site roads - Start
	🚉 Perform earthwork		09/14/2015		
4.2	🚖 Perform foundation work and build base	09/04/2015	09/17/2015		
4.3	🚉 Install slabs	09/17/2015			
4.4	Initial construction work is completed				

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).

	project plan. Apartment	building const	acci	on a		
lan	More					
()	• X • Q • + = <u>ii</u>				* + / × = =	T -
	Subject	Churt Date	End D		15 Mon 03 Aug 2015 Mon 10 Aug 2015 Mon 17 Aug 2015	Mo
NO.	Q	Start Date	End D	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 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	\exists Hold a meeting on the project initiatio	Add	Þ	2015	oject initiation	-
2	Approve the project documentation	Edit		2015	ject documentation	
2.1	🚖 Obtain construction permit	Resources		2015	construction permit	
2.2	Approve construction documentation	Delete Task(s)		2015	ve construction documentation	
3	Prepare building site	Transform to Miles	stone	2015	Prepare building site	
3.1	🚖 Perform site engineering work	Edit Dependency	Þ	2015	Perform site engineering work	
3.2	🚖 Install a fence	Delete Dependen	су 🕨	C	Obtain construction permit II a fence	
3.3	🚖 Lay on-site roads	Highlight Task	Þ	2015	Lay on-site roads	
3.4	The site is ready for construction سلَّر	Show Task in Dia	gram	2015	The site is ready for construction 🔶	
4	Perform initial construction work	08/31/2015	09/21	/2015	Perfor	rm ini
(rén e de la l				4	+
	Ylan No. 1 2 2.1 2.2 3 3.1 3.2 3.3 3.4 4 4	Image More Image Image Image Image Subject Image Image Image Image Image Image Image Image Image Image Subject Image Ima	Image More More Start Date Subject Start Date No. Subject Start Date I ➡ I ➡ Q ⊕ I E I No. Subject Start Date I ➡ Hold a meeting on the project initiation Add Edit Edit Resources Delete Task(s) Transform to Miles Edit Dependency Delete Dependency Image: Perform site engineering work Edit Dependency Image: Lay on-site roads The site is ready for construction More More Image: Perform initial construction work 08/31/2015	Ian More Image: More Image: More Subject Start Date End D No. Subject Start Date End D Image: More Image: More Edit Edit Image: More Image: More Edit Edit Image: More Image: More Image: More Edit Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Image: More Im	Image More More Start Date End Date No. Subject Start Date End Date I ➡ I ➡ I ➡ I ➡ I ➡ I ■ I No. Subject Start Date End Date I ➡ Hold a meeting on the project initiatic Add ▶ 2015 I ➡ O O ➡ I ● 2015 I ➡ O O ➡ O O ● 2015 I ➡ O O Delete Task(s) 2015 Delete Task(s) 2015 I ➡ Perform site engineering work ➡ Delete Dependency ▶ Perform site roads ➡ Delete Dependency ▶ I ➡ I ■ Start Date Edit Dependency ▶ ■ I ➡ Perform initial construction work O8/31/2015 O9/21/2015	Approve the project initiation Approve the project documentation C C C C C C C C C C C <

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.

an	More																
	• X 4		} 2=3 <u>∎h</u>				8						÷.	/ X			Ŧ
15	i Mo	n 03 Aug 2015	Mon 10 Aug	2015	Mon 17 Aug	2015	Mon 24 A	ug 2015		Mon 31	Aug 201	5	Mon 07	7 Sep 201	.5	Mon 1	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	МΤΝ	V T F	S S	МТ	WTF	s õ	мт	W
oje																	
jeo		ation															
CO		ermit															
/e			*														
			g site			-											
			work														
					roads												
							vela 💌	-	-							_	

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

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

>	× I	\$ (€, ⊕	↓	к=л	<u>th</u>												+	- /	× Ξ	Ţ	Ŧ
)15		Mon 03	Aug 20	15	Mon	10 Aug	2015	Μ	on 17 A	ug 201	5	Mon 2	4 Aug 20)15	Mon	31 Aug	2015	Mon	07 Sep 2	2015	Mon	14 9
F	S S	MTV	VTF	s s	MI	r w 1	FS	S M	TW	T F	S S	МТ	WΤ	F S S	МТ	WT	FS	5 M 1	T W T	F S 🖁	МТ	W
					-																	
			ľ																			
					*																	
						- *	- 1															
										¥												

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 Proje									9	Ac		istra 2	ator	6	9	?
Edit	a project plan: "Apartment Bui	ilding Cons	struction a	at 253 F	Hill Street"	versi	ion	1								
Plan	More															
+	→ X ◆ Q Q ↔ 5-3 <u>II</u>			3					÷	- ,	/ :	X			Ŧ	~
No.	Subject	Start Date	End Date	15	Mon 27 Jul 201	5	Mon	03 Aug	2015		Mon	10 4	Aug 2	015		Мо
	Q,			FSS	MIWIF	5 5	MI	W	F S	5	м			F S	5	М
1	😑 Hold a meeting on the project initiation	08/05/2015	08/06/2015		eeting on the proj	ject initiat			h .							
	🛯 📇 Approve the project documentation	08/07/2015	08/11/2015									4				
2.1	🚖 Obtain construction permit	08/07/2015	08/07/2015						* _							
	Approve construction documentation	08/10/2015	08/11/2015								*					
			-													

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		Administra	ator	?
Apartmo	ent Buildii	ng Constru	uction at 253	3 Hill Street Project P	vlan - version	1	
		ne project plan: v blished tasks. Al		oplied to the tasks only after the	project plan is publis	hed.	×
Plan Ab	out the version	Versions					
				Quantity 15 🗸	Items found: 1 Page	es: 1 😘	\$
Name	Start Date	End Date	Date published	Quantity 15 🗸 Published By Version 🗸		es: 1 😘 tatus	\$

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 Pro						Admir	nistrator 😢 👼 📀	?
Ana	artment Building Construction at 2	253 Hill St	reet Proi	ect Plan - version	1			
			-		1			
i 1	The Apartment Building Construction at 253 Hill Street	project plan is p	oublished					
Plan	About the version Versions							
+								Τ.
No.	Subject	Start Date	End Date		Non 21 Sep 2015	Mon 28 Sep 201	5 Mon 05 С s s м т w	
		00/15/0015	00/16/2015	Y		MIWIF	5 5 M I W	
1		09/15/2015	09/16/2015					- 1
2	Approve the project documentation	09/17/2015		entation				
2.1		09/17/2015		permit	_			- 1
2.2		09/18/2015		umentation				
3	Prepare building site	09/22/2015	10/06/2015	Prepare building site	+			
3.1		09/22/2015		orm site engineering work				
3.2		09/30/2015	10/05/2015		Install a fe	nce		
3.3		09/30/2015	10/05/2015		Lay on-site ro	ads		
3.4	The site is ready for construction	10/06/2015	10/06/2015		The site	is ready for const	ruction 🔶	
4	Perform initial construction work	10/06/2015	10/28/2015		Perform	n initial construction	on work	
۰.			•	•				+

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).

To Projec	tt Publish Save Cancel					Administra	ator ?
Edit a project plan: "Apartment Building Construction at 253 Hill Street", version 2							
You are editing the Currrent version of the project plan After saving, the new version of the project plan will be created							
Plan More							
$\leftarrow \rightarrow \mathbf{X} \diamond \bigcirc \bigcirc \oplus \mathbf{H} \stackrel{\mathbf{H}}{=} \mathbf{H} \qquad \qquad \diamond \qquad \qquad + \cdot \mathbf{Z} \times \mathbf{H} = \mathbf{T} \cdot$							
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	Mon 05 Oct 201 S M T W T F
1	$[\hat{\Xi}]$ Hold a meeting on the project initiation	09/15/2015	09/16/2015	3			-
2	Approve the project documentation	09/17/2015	09/21/2015	intation			

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		?
	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	Chan	ge the proj	ject stage	\times	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		8	Administrator	\odot	?
Project - Apartment Building Construction at 253 Hill Street								
General informatio	n		\odot	🌓 Project Risks				\odot
Project Stage	Active			No data to display				
Project End Date	from 9/15/2015 💽	till 10/6/2016 [1					

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 Main Page Mared Filters Current projects Project drafts	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 Quantity 15 v Items found: 1 Pages: 1 Image: 1 Quantity 15 v Items found: 1 Pages: 1 Image: 1 </td
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.

	Projec	t Edit Operations			Administrator ?
Ар	art	ment Building Construction at	253 Hill St	reet Proj	ect Plan - version 5
Pla	an	About the version Versions			
4		→ X			ş – –
N	0.	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 T F S M T F S M T T T F S S S M T T F
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
3		▲ ➡ Prepare building site	09/15/2015	09/29/2015	Prepare building site
3.	.1	Reform 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
з.	.4	The site is ready for construction سلم	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	Reform foundation work and build	10/09/2015	10/15/2015	Pe 🗸
				•	< >

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		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).

	version Versions						
⊢ → X Subject	A O O A E	7 .8	Resource Load	د		×	4 Sep 2015 Mon 21 S
		e Ward Steven resource	e load				W T F S S M T W
.3 🖹 I .4 🗗 1		09/17/2015	to 09/17/2015			Show	ady for construction
⊿ 🚖 Per	TTUJECI	Plan	Task	Start	End	Load	tial construction work
.1 🖹 I .2 🖹 I	Aparation building 0	onstruction at 6	Install a fence	9/17/2015	9/22/2015	100	Perform earthwork
.3 🖹 1	OFO LUN Observe	onstruction at 6	Lay on-site roads	9/17/2015	9/22/2015	100	

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		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	The project stage is changed								
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	My Project Tasks						
Manager Administrator			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 3.7.3.13719			_ 🗆 🗙
Menu Organizational Structure Processes Image: Change Folder Image: Folders Image: Change Folder Image: Change Folde	Restore Move	Management Projects KPI	Reports Scripts Publica	ation	Style 🔹 🦳 MAX 🥥
Project Types All Project Types Project Project Recycle Bin	Project Type List Name Project	Author	Created On	Changed On	Published On

Fig. 41. Creating a project type in ELMA Designer

Enter the project type name in the emerged window and click **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 characters.				
	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 (Object)	1
	Changed On	ChangeDate	Date/Time	~
	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)"> (1	-N)
2	Project Roles	ProjectRoles	List<"Project Role (Object)"> (1	-N)
4	• Manager	Manager	User (Object)	~
	Project Access Settings	AccessSettings	List<"Project Access Settings (Object)
Base Type	Planned Expenses	BudgetExpenseItems	List<"Budget Expense (Object)"	"> (1-N)
	Planned Income	BudgetIncomeltems	Add Property	> (1-N)
	Message Channel	InfoChannel	Add Block	~
	• Folder	Folder	Edit	
	Budget Folder	FolderBudget	Delete	
	Process Instance	WorkflowInstance	Process Instance (Ob	oject)
Attributes	Time Report Limit	PlanWorkLogs	Up Report Limit (Object))"> (1-N)
ALUIDURS	· Calendar	CalendarType	Down pe (Enumeration)	\checkmark
	Personal Calendar	Calendar	Copy endar (Object)	
	Common Calendar	GlobalCalendar	Paste endar (Object)	
Λ	Comments	Comments	List<"Comment (Object)"> (N-N	
4	Current Plan	CurrentPlan	Project Plan (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 ¥
	OK Rancel
	OK 🔞 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	BudgetIncomeltems	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
Attributes	Personal Calendar	Calendar	Object Calendar (Object)	
Attributes	Common Calendar	GlobalCalendar	Object Calendar (Object)	
	Comments	Comments	List<"Comment (Object)"> (N	
	Current Plan	CurrentPlan	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
	Create document folders automatically	Project Attributes 🕨	UID	Responsible
			Project Stage	Fax
General			Created On	Web Site
			Author	Partner
			Changed On	Company's Day
0			Changed By	Annual Income
			Start Date	Legal Address
			End Date	Postal Address
			Status	Individual Taxpayer Number (ITN)
Base Type			Manager	Description
			Message Channel	Created On
			Folder	Author
3			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	ack 🖉	🚽 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).

•	ELM	MA 3.7.3.13719		_ 🗆 🗙
Menu Organizational Structure Processes	Objects Document Management	Projects KPI Report	ts Scripts Publication	Style 👻 🦳 MAX 😢
Save General				
Project Types	Project Type List 😑 Low-Rise C	onstruction of Cottages 😣		
	Description Attributes Ta Project Type Name Low-Rise Construction of Cottages Forbid to create in web applicat Description Description Data Structure		Flows (Processes)	Forms (reresentations) (Templates 4)
				.::

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).

ELMA 3.7.3.13719 X							
Menu Organizational Structure Processes	Objects Document Mana	gement Projects KPI Rep	orts Scripts Publication	Style	MAX 🕐		
	Edit Delete ransition Transition						
Project Types		-Rise Construction of Cottages 😣					
All Project Types Low-Rise Construction of Cottages Project		Table 🐨 Filter 😫 Life Cycle	(- (·	vanced <> Forms (reresentations) (Templates 4 🕨		
En Recycle Bin	Initial Stage	Transition	Final Stage	Action By defau	ult		
	<u>Draft</u>	Publish Project	Active	Publish	×		
				Yes	÷		
	Active	Close Project	Completed	Close (Send to Archive)	×		
			•	_			
	<u>Completed</u>	Reopen Project	Active	Reopen	×		
	l						
			⊽				
			Draft	Publish Project 🔶 Ac	tive		
					.::		

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 Manager	ment Projects KPI Reports	Scripts Publication		Style 👻 🕅 MAX 📀
Add Change Stage Stage Create Edit Transition					
Project Types		ise Construction of Cottages 8			
All Project Types Section of Cottages Section of Cottages Section of Cottages Section of Cottages	Description Attributes Allow to change statuses ma	Table Filter E Life Cycle		d < Forms (reresentations)	
⊞- ^m Recycle Bin	Initial Stage	Transition	Final Stage	Action	By default
	Draft	Publish Project	Active	Publish	×
					Yes 🛑
	Active	Close Project	Completed	Close (Send to Archive)	×
	Completed	Reopen Project	Active	Reopen	+ X
			<u>Narro</u>		
			Δ		
		Publish Project			
		Reopen 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 3.7.3.1	13719			- 🗆 🗙	
Menu Organizational Structure Processes	Objects Document Management	Projects KPI Reports	Scripts Publica	ation Styl	e - MAX 📀	
Add Change Delete Stage Stage Transition						
Project Types	Project Type List E Low-Rise Cons	struction of Cottages * 😣				
🖃 🚰 All Project Types	i Description 📔 Attributes 🔲 Table	Filter 📴 Life Cycle	Flows (Processes)	Advanced <> Forms (rereser	ntations) 🛛 🗸 🕨	
Low-Rise Construction of Cottages Froject	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				+ +	
	Performing Construction Work					
	Construction Completion and Commissionin	<u>q</u>			+	
		Ψ	····· v			
			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	- 🗆 🗙
Name *	Publish Project	
Description		~
Initial Stage*	Draft	-
Final Stage*	Obtaining Construction Permits	-
Action *	Publish	-
	Define Process <not selected=""></not>	
	О К	🙁 Cancel

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	uction of Cottages * 🛛			
🖃 🚇 All Project Types	i Description 📕 Attributes 🔲 Table 🦷	🖓 Filter 😫 Life Cycle 🔘 Flows (Processes) 🕼 Advanced < Forms (reres	entations) 📮 Templates 😡 Scri	pts
Low-Rise Construction of Cottages Froject	Allow to change statuses manually		Automatically publish the project upon creating	ation	
	Initial Stage	Transition	Final Stage	Action By default	^
4	Draft	Publish Project	Obtaining Construction Permits	Publish	*
				Yes	-
	Completed				-
	Obtaining Construction Permits	Start Construction	Performing Construction Work	Without proc	×
					-
	Performing Construction Work	<u>Construction Work Completed</u>	Construction Completion and Commissioning	Without proc	*
					-
	Construction Completion and Commissioning	Project Completed	Completed	Close (Send t	×
					🔶 🗸
			A A		
			Draft Publish Proje	Obtaining Constructi	on Permits
			PublishProj	••••••••••••••••••••••••••••••••••••••	

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).

•		EL	.MA 3.7.3.13719			_ □	×
Menu Organizational Stru	ucture Processes	Objects Document Management Pr	rojects KPI Reports Scri	pts Publication		Style 👻 🗌 M	
Add Change Delete C	Create Edit ansition a transition T Stage Transition	s Publish	uction of Cottages * 3				
🖃 🚇 All Project Types		Description Attributes Table	P Filter 😫 Life Cycle 🔘 Flows (
Low-Rise Construct	ction of Cottages	Allow to change statuses manually		Automatically publish the project upon crea	ition		
		Initial Stage	Transition	Final Stage	Action By	/ default	^
- im necycle bin		Draft	Publish Project	Obtaining Construction Permits	Publish		×
					Ye	s	4

Fig. 57. Publishing a project type

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

0			ELMA 3.7.3.1	3719				×
Menu	Organizational Structure	Processes Obj	ects Document Management	Projects KPI	Reports Scripts	Publication	Style 👻 MAX	x 🕐
Gener Sectio	server							
Warnin The object		iged. For changes	to come into effect the server	must be restarted."	You can do that from h	here by clicking the Res	start Server button.	Î
க் Org	anizational Structure		*	O Processes	5		*	
The org	anizational structure is	published (version	13)	Processes cha	anged:	Go to Proces		
Published	d On	5/15/201	5 2:12 PM	Drafts		1		
Published	d By	Administ	rator ELMA	Published		42		
				Deleted		<u>9</u>		
								~

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 t	he project stage to	"Performing Const	ruction Work'	_ 🗆 🗙
General Input/O	utput Attributes				
	Input Variables			Output Varia	ables
Parameters	Туре	Process Context	Parameters	Туре	Process Context
Project	Basic Project Type (O.,	. <u><not defined=""></not></u>			
Project Stage	Project Stage (Object)	<not defined=""></not>			
			۹		
			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	e 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/	General Input/Output Attributes									
	Input Var	iables		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	-	1						
			4	1						
			-							
					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	Ienu Organizational Structure			Objects	Document M	anagement
	H		1		9	
Model *	Save	Check	New Sub-Process	Start Debugging	Visibility of Variables	Naming instances
Section		Publis	ral			
	st 💽 🖳	Publisi		Contractor*		
Graphic M	lodel 🐻 Conte	xt 👵 P	erformance Ma	trix 🕥 Metri		
	BPMN Elemen	its			Techest Manager	
🖃 📄 Even	its		A 1		Project Manager	
O s	Start					
-0	ntermediate				$\mathbf{\gamma}$	
- O E	End				Prepare	
🖃 📄 Oper	ations				tender for selection of	
🔳 L	Jser 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.

Create a transition – 🗆 🗙
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 Constru	-	Processes) 🕼 Advanced 🕞 Forms (rerese	entations)					
Allow to change statuses manually								
Initial Stage	Transition	Final Stage	Action	By default				
Draft	Publish Project	Obtaining Construction Permits	Publish		*			
				Yes	-			
Completed					4			
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 Publicat	ion Style - MAX 📀
Save Close Form () (*)	Column Panel Tab					
Edit Form	Main Elemen	ts				
Low-Rise Construction of Cottages	s - Create 🛛					
Properties		M. Duringh Calification				^
Planned Expenses	T* 🔟 ab 🔺	 Project Settings 				
Planned Income	T* 🔟 ab	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						i
Personal Calendar		✓ Calendar				
Common Calendar		Calendar				
Comments	T* Ⅲ ab =	Calendar				
Current Plan	T* 🔟 ab	> Advanced paramet				
Customer		 Advanced parameter 	ers			
General Contractor						
Form Elements						v
						.::

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 Cot	tages - Create* 🛛 🕄			
Properti	es		An Device the Collinson	^
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 *	- Q -
Calendar	T* 🔟 🔤			
Personal Calendar	T* 🔟 🔤	-	✓ Calendar	
Common Calendar	T* 🔟 🕫			
Comments	T* 🔟 🔤		Calendar	
Current Plan	T* 🔟 🕫			
Customer	T* 🔟 ab		Advanced parameters	
General Contractor	T* 🔟 ab	-		
		•		
Form Elen	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		✓ Project Settings	
Planned Expenses	T* 🔟 ab		+ Floject Settings	
Planned Income	T* 🔟 🔤		Name *	
Message Channel	T* 🔟 🛛			
Folder	T* 🔳 🔤		Start Date *	
Budget Folder	T* 🔳 🗗		End Date *	
Process Instance	T* 🔟 ab	4		
Time Report Limit	T* 🔟 🔤		Manager *	
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				
Edit Form	Main Elements				
Low-Rise Construction of Cottages	- Create * 8				
Properties		✓ Project Settings			^
Planned Expenses	T* 🔟 📣 🔺	 Project settings 			
Planned Income	T* 🔟 ab	Name *			
Message Channel	T* 🔳 🗗				
Folder	T* 🔳 🔤	Start Date *			
Budget Folder	T* 🔳 🗗	End Date *			
Process Instance	T* 🔳 ab	chu bate			
Time Report Limit	T* 🔳 🔤 👔	Manager *			
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			Administrator	\odot
Configur	re "Low-R	ise Constructi	on of Cottag	es"		
General Sett	ings Roles	Stages Time Rep	ort Permissions			
Name		Description				
Project Administrators Users wit		Users with ful	access to the Project	t		1
Stakeholders Users wit			ces to the project			
Supervisors Users with		Users with pri	vileged access to the	project		/ >

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		\times
Name * Description Mark the permissions at	Architects]
 Access to Project Administering the pr Add Project Particip: Manage Project Part View Project Budget Manage Project Budget View Project Plan Manage Project Plan Manage Project Plan Create Messages in View Project Risks Manage Project Risks 	ant ticipants t Iget n Project Information Channel		
		Add Cance	

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	👎 Project Risks 📀
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			8	Administrator	?
Low-Ris	e Construc	ction of Co	ttages (Te	mplate)				
You are view	wing the template	e fot the "Low-Ris	e Construction	of Cottages" project type				\times
🖹 Gene					🌵 Project Risks			
Project En	d 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 (Templa	te)
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).

u are viewing the template fot the "Low-Ris	e Construction of Cottag	es" project type	:
General information	۶×	💱 Budget	& ×
📮 Project Plan	& ×	🕂 Project Risks	& ×
Project Messages	& ×	😫 My Project Tasks	& ×
Project Documents	Ъ×	Project Tasks from Me	۶ مح

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	
Lompany	Image: Second control of the second control of t
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	Actions							9	Administrat	or 💌 📀 🔅
Project budget: Project - Lo	w-Rise Construction	on of Cottages (Temp	late) - version 1							
You are viewing draft of project budget: Vers	ion 1									×
Budget About the version Versions										
🔊 🎜 v 📳 🔹							Decemb	oer 23, 20	15 - Januar	y 29, 2016
0 december 2015										january 2016
Expected Revenue	Expected Expense	Expected Balance	Actual Revenue	Actual Expense	Actual Balance					
Subject				Item	Task	Date	Plan	Fact	Deviation	Deviation, %
Revenue, Inpayments Expenses, Outpayments							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						
	Create	Cancel				

Fig. 85. Adding a project phase

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

Project	Publish	Save Changes	Add	Cancel		9	Administrator	
roject k	oudget: P	roject - Low	/-Rise Co	nstruction	of Cottages (Temp	olate) - version	1	
Budget A	dvanced							
Subject				Ite	em	Task	Date	Plan
⊿ Revenue	, Inpayments							0.00
Devel	op and approve	e project documen	tation					0.00
Prepa	re the construc	tion site						0.00
Const	ruction works							0.00
Lay ex	kternal network							0.00
Perform the site improvements							0.00	
Comm	nission the build	ding						0.00
Expense	s, Outpayment	S						0.00
								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 construc	ction site V Q +	
Project Phase	Prepare the construct	ction site	
Subject *	Prepare the construct	tion site	
Totals	Date	Total	
		8,000.00	🥒 🗙
		3,000.00	🧷 🗙
	+ Add Value		
			Create Cancel

Fia.	87.	Addina	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.

Project	Publish	Save Changes	Add	Cancel		2	Administrator	
roject k	budget: P	roject - Low	-Rise Cor	nstruction	of Cottages (Templat	e) - version	1	
Budget A	Advanced							
Subject				It	em	Task	Date	Plan
⊳ Revenue	e, Inpayments							0.00
⊿ Expense	s, Outpayment	S						0.00
Devel	lop and approve	e project document	tation					0.00
⊿ Prepa	ire the construc	ction site						0.00
🖌 Pre	epare the constr	uction site		F	Prepare the construction site			11000.00
							01/13/2016	8000.00
							01/13/2016	3000.00
Const	truction works							0.00
Lay ex	xternal network	c						0.00
Perfor	rm the site imp	rovements						0.00
Comn	nission the buil	ding						0.00
Result								0.00

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 Proje	ct		Folder	Operations	Selected	Send	Table	Administr	ator	0	?
		~	~	~	~	~	~		Carl	U	1
(Tem	nplat	te) Low-Ri	se Constr	uction of (Cottages						
Shared	Folder	s \ Projects \ Te	emplates \(Temp	late) Low-Rise C	onstruction of Co	ottages					
			f the File type by cuments you crea		m File Explorer t	o this page. The	se files will be aut	omatically uploa	aded to th	е	×
Sear	Search Q Search									ch	
Advan	iced Se	earch									
					Quant	ity 15 🗸	Items found: 5	Pages: 1	S 🗖		٥
		Name			Author			Created On			
		📒\(Level up	p)								
	≣×	Payment D	ocuments		Administra	ator	6/23/2015 11:01 AM				
	≡×	Certificates	s of Ttitle		Administra	ator	6/23/2015 2:20 PM				
	≣×	Schematic	Design		Administra	ator	6/23/2015 2:21 PM				
	≣×	Initial Data	for Design		Administra	ator		6/23/2015 2:21	PM		
	≣×	Constructio	on		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	2	Administrator	9	?	
(Templa	ite) Low-Ri	se Construction of Cottages - Risks				
		Quantity 15 🗸 Items for	und: 3 Pages: 1	G	۰	
Subject 🔨			Importance			
-	nly Qualified Hum itial staff training a	an Resources nd build a candidate pool.	High	8	×	
Late Delivery of Materials The contract should provide for the possibility of imposing penalties and changes in the conditions of cooperation in the Regular case of late delivery.						
Late Payme The contrac case of late	t should provide f	or the possibility of imposing penalties and changes in the conditions of cooperation in th	e High	2	×	



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-R	ise 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 O 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 Operatio	ons Go to	9	Administrator	? ⓒ 🔅
Project - Cottage C			essfully. Project stage:	"Draft"		
You are reviewing a draft of the will become Current and projec	t tasks will be assign		shed - choose an approp		hat. After the publicati	on, project
Project Stage	Draft		(ms found: 3 Pages	s: 1 😘
Project End Date Manager	from 7/1/2015 Ward S.	oj till 7/1/2016 🖸	Late Delivery	of Materials	Reg	ular
Customer General Contractor	Vincit			ect Tasks		\odot
Project Role Stakeholders +: Supervisors +: Architects +:			Type Priority No data to dis		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 Cancel			-	🍝 🌜	2	\odot
Calendar - Add an it	em					
Name *	Work calendar Lo	w-Rise Constru	ction			
Working Time 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	🖉 🗙
	Wednesday			8:00 AM	5:00 PM	🥒 🗙
	Thursday			8:00 AM	5:00 PM	🖉 🗙
	Friday			8:00 AM	5:00 PM	🖉 🗙
	Add Resource					
Non-Working Days	Start Date		End D	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				20	dministrator
Projects	Projects					
	Search Object Type All		×		Q	Search Show only mine
Project drafts	Advanced Search	Deviet Store	Stat Date	Quantity		
	Apartment Building Construction at 253 Hill Street	Project Stage	Start Date 9/1/2015	End Date 9/22/2016	Status	Manager
<	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.

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

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	×
Subject *	Starting business process "Budget Process"	
Start Date	07/28/2015	
Specify Duration		
Duration *	1 day(s)	
Process Title *	Budget Process V	
	Business processes with the "Start Business Process"-type input variable can be automatically started from the project plan	
Description]
	Create Cance	el

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).

Plan	More			
-	→ X ◆ Q Q ↔ 5:3 <u>II</u>			8 +• / × = = * •
No.	Subject	Start Date	End Date	13 Jul 2015 Mon 20 Jul 2015 Mon 27 Jul 2015 Mon 03 Aug 2 Tow T F S M T F S M T W T F 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 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 T W T F S S M T W T F S S M T
1	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 علم			
4	⊿ 🚊 Perform initial construction work		09/21/2015	
	Perform earthwork		09/14/2015	
	🚊 Perform foundation work and build basement	09/04/2015		
	🖹 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				8										÷	•		×	-		Ŧ	-
	No.	Subject	Start Date	End Date	Duration	5 s s		on 13 Ju		-		on 20	Jul 20		s s			Jul 2		S S		03А т w	-
	1	Construction Permits	07/15/2015	07/24/2015	8 day(s)	ction Per	-	· ·			-			-									<u>^</u>
	2	O Starting business process "Budget Process" (Map)		07/27/2015	1 Day			Starting) busin	ess proc	cess	"Budg	et Pro	cess		ò	1						
	3	⊿ 🚖 Prepare building site	07/28/2015	08/17/2015	15 day(s)							Prepa	re buil	lding		ļ			1				1
	3.1	a Perform site engineering work		08/04/2015	6 day(s)						orm s	ite en	gineer	ing v	vork							h	
	3.2	🚖 Install a fence	08/05/2015	08/10/2015	4 day(s)													I	nstall	a fen	се	Ľ	
	3.3	🚊 Lay on-site roads		08/14/2015	4 day(s)																	Lay	
	3.4	The site is ready for construction	08/17/2015	08/17/2015	1 Day																		-
	•			·	• •	4		· ·														×	
		Rogers Alan			8														I				T
	P	Ward Steven			8]																	ľ
	4				ŀ	4																	•

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	г		100	/ ×
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).

Со	tta	ge Construction (Vincit) Project	Plan - ve	rsion 4																						
Pla	n	About the version Versions																								
4		→ X + Q Q + ⊨ <u>ii</u>																								T -
N	Subject		Start Date	End Date	n 27 Jul 2015			Mon 03 Aug 2015			Μ	on 1	0 Au	20	15		Mor				Mon 24 Aug					
		9,			T	W T	F		МТ	W	Т	F		М	Т	W	T F			м	Т	Т	F		M	W
		Obtaining Construction Permits				h.																				
		🔷 🚫 社 Starting process "Budget Process"				Ċ																				
		⊿ 🚊 Prepare building site							-			-						٠	-							
		Perform site engineering work																								
		🖹 Install a fence																								
		🖹 Lay on-site roads	08/14/2015															V								
	4	The site is ready for construction			015 The site is ready for construction																					
4		Perform initial construction work																							-	-
				►	•							_							_							F
ł	₽	Excavator PH578PT		8 4																				L		
ł	₽	Mobile Crane Grove RT890E		8										h	Ι									L		
-	₽	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	🗟 Current Projects 📀									
All	Quantity 15 Items found: 4 Pages: 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	Choose Project Plan	Undo		2	Administrator)
Resour	ce Optimizer						
No projects	are loaded						×
	A	dd Projects					
	Specify the projects to be ac	ded to the resource	optimizer:				
	Cottage Construction (Ormi	Ltd) × Cottage (Construction (Vine	cit) ×			
¢			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	formation about the Shaw Craig resource load													
From	07/26/2015	to	07/31/2015			Show								
Project	Plan	Task		Start	End	Load								
Equipment implementation Impact International	for 2	Project exec	cution	7/2/2015	8/24/2015	100								
Equipment implementation Impact International	for 2	Configure th	e 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	?					
	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	G					
ľ	Project End Date	from 6/23/2015 🧕 till 6/23/20	16 🖸	Lack of Highly Q	rces	High							
	Manager	Ward S.		Late Delivery of	Materials		Regular						
		Business Calendar		Late Payments			High						
	Project Role			🗟 My Projec									
				Type Priority S No data to display	End Date ٨								

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	\times
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 Change Stage Operations	Go to	
Project - Cottage Co			
i 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 + : Architects + :		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	Adr	ninistrator	\odot	?					
Project -	Cottage	Construction (Vincit) Quantity 15 v Items found:	3 Pages: 1	5	ð					
Subject 🔺			Importance		*					
	Lack of Highly Qualified Human Resources Organize initial staff training and build a candidate pool.									
The contract s	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.									
Late Payments The contract si case of late pa	hould provide fo	r the possibility of imposing penalties and changes in the conditions of cooperation in the	High		×					

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							_	nistrator)
Project	t budget: Pr	oject - Co	ottage Cons	tructio	n (Vinci	t) - version 1						
Budget	About the version	Versions										
8	7 🗟 🗸 📋	-		•			D	ecember	24, 201	5 - Jai	nuary 29, 1	2016
20000 15000 10000												•
-5000												
-10000												<u> </u>
-20000 decem	ber 2015 Expected R Actual Bala		Expected	Expense		Expected Balance)	- Actual Re	venue		january Actual Expense	_
Subject					Item			Task	[Date	Plan	
⊳ Rever	ue, Inpayments										21500.00	
	ses, Outpayments										15700.00	
⊿ Per	form the site improv	ements			Perform th	e site improvements					2700.00	
									12/29	/2015	2700.00	
⊿ Lay	external network				Lay extern	al network					2000.00	
D	noro the construction	n cito			Droc and th	o construction alt-			01/22	/2016	2000.00	
⊿ Pre	pare the construction	n site			Prepare th	e construction site			01/42	2016	11000.00	
										/2016	8000.00	
Der	colon and entresses	project desure	optation						01/14	/2016	3000.00	
	velop and approve		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).

pject Publish Save Changes Add	Cancel		Admir 🥑	histrator
oject budget: Project - Cottage Const	ruction (Vincit) - vers	ion 1		
dget Advanced				
ubject	Item	Task	Date	Plan
Revenue, Inpayments				21500.00
Expenses, Outpayments				15700.00
Perform the site improvements	Perform the site improv	ements		2700.00
			12/29/2015	2700.00
▲ Lay external network	Lay external network			2000.00
			01/22/2016	2000.00
Prepare the construction site	Prepare the construction	n site		11000.00
			01/13/2016	8000.00
			01/14/2016	3000.00
Develop and approve project documentation				0.00
Prepare the construction site				0.00
Construction works				0.00
Lay external network				0.00
Perform the site improvements				0.00
Commission the building				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	incel

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		
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			
Attach a file from the computer			
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.

Financial Documents							
				Quantity: 15	V Items found: 1	Pages: 1	5
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).

Budget About the version Version						
Version Version						
🧞 ፮ × 🖺 📾			🖮 Octo	ber 1 - Deo	ember 31,	2015 🔿
	Budget for the perio	od from 1/1/2016 to 1/	31/2016			
Subject	Item	Date	Plan	Fact	Deviation	Deviation, %
Revenue, Inpayments			26250.00	6400.00	-19850.00	-75.62
⊿ Expenses, Outpayments		13000.00	10700.00	-2300.00	17.69	
Lay external network	Lay external network		2000.00	0.00	-2000.00	100.00
Prepare 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
Develop and approve project doc	u		0.00	0.00	0.00	
Prepare the construction site			0.00	0.00	0.00	
Construction works			0.00	0.00	0.00	
Lay external network			0.00	0.00	0.00	
Perform the site improvements			0.00	0.00	0.00	
Commission the building			0.00	0.00	0.00	
Result			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).

roject - Cottage Cor	nstruction (Vincit)					
General information		Project Time			Ş	• 📀
Project Stage	Obtaining Construction Permits			3	Group by Exe	ecutor
		Occupation	Pending Approval	Approved	Rejected	I
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
	ks T.	Lack of Highly Quali			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			-		Admini	strator	\odot	
Configur	re "Low-Ri	se 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	Assign the user to approve project time reports. If this field is left empty, the time reports will be sent for approval to to the project manager.										
Ward Stev	en (Project mana	iger)	~ 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			468	ord S. 3 🤔 👼	?
Project - Cottage	Constructi	on (Vincit)	🖌 Edit 🚴 Change Ma	inager					
🚊 General informati			Export Proje	ect	Project Tim				
Project Stage		ning Construction	🕒 Time Repor	rt Limit				💕 Group	by Executors
			Roles		Occupation				Budget
	from	7/15/2015 🔘	Project Acc	aca Dermissiana	External Works	40 hour(s)	136 hour(s)		0 m.
Manager			Fillet Act	ess remissions	Total	40 hour(s)	136 hour(s)	0 m.	0 m.
	Vinci				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	\times
Occupation *	External Works	
Time Limit	50 v day(s) 0 v hour(s) 0 v m	in(s)
Do not fill in the	Time Limit field if this occupation has no project time report limits	

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 Construction (Vincit) - Project Time Report Limit								
Occupation		Time Limit						
External Work	s	400 hour(s)	1 ×					
+ 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 C	reate Change Stage Opera	ations Go to			Ward S.	?
Project - Cottage Con	struction (Vincit)					
General information			🕒 Project Tim	ne Report		ی 🖋
	Obtaining Construction Permits				🔀 G	roup by Occupations
	Obtaining Construction Permits		Executor	Pending Approval	Approved	Rejected
Project End Date	from 7/15/2015 🔯 till 3/1/2	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 : () m.		
General Contractor						

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

6	Process List Request for Overtime * 3									
	Graphic Model 😡 Context 🚨 Performan	ice 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)	ExtraHoursRequested	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	Organizational Struc	ture Processes	Objects Do	cument Management	Projects	KPI Reports	Scripts	Publication	Style 👻 🌔	MAX 📀
	e ee									
Save	Add Delete									
General	Flows									
🕘 Pro	Project Types									
🖃 · 🔔	All Project Types		i Description	📕 Attributes 🔲 Tabl	e 🖓 Filter	😫 Life Cycle 🧕	Flows (Proce	sses) 📮 Advar	nced	<
	Low-Rise Construction	on of Cottages	Name	Ven	sion Auth	nor	Publish	ned On	Project	
	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 Ent Send Process Instance Name *	ter or c	lick					
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 Terr	plate			Administrator	\odot			
Configu	re "Low-R	ise Coi	nstructior	n of Cottag	ges"					
General Sett	ings Roles	Stages	Time Report	Permissions						
✓ Permissions to create project										
Define a list of the users who can create projects ✦ Add										
🗸 Permi	ssions to accep	t project pl	an							
Define a lis	t of the users wi	ho can acce	ept project plans							
Y Permi	ssions to accep	t project b	udget							
Define a list of the users who can accept project budgets ✦ Add										
 Permissions to edit time report limit 										
	list of the users	who can ed	it time report lim	its						

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 Ter	Administrator
Configure "Low-Rise Co	nstruction of Cottages"
General Settings Roles Phases	Time Report Permissions
✓ Approve Project Plan	
Send a project plan for acceptance be Always	ofore publication
> Approve Project Budget	
✓ General Project Tasks Settings	
Show to executors all tasks that will start in (days)	0 Executors will see the project plan tasks in days before their actual start dates
Consider links between project plan tasks	Yes No 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	
	task time limit is overdue, the task will be highlighted in the project plan
50	

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	t Save Changes Cancel						5	25	Administ			
Edit a	project plan: Cottage Construct	ion (Vincit), versio	n 5								
Plan	Advanced											
-	▶ X ♦ Q @ ⊕ ⊵3 <u>H</u>							+ -	/ X			T -
	Subject	Church Durba				Mon 28 Dec 201	015 Mon 04		04 Jan 2016 Mo		Mon 1	1 Jan 1
No.	Q	Start Date	End Date	МТ	WOT F S S	M T W T F	S S	МТ	WTF	S S	МТ	WT
1	▲	12/24/2015	02/03/20	on work	9							
1.1	🖹 Perform earthwork	12/24/2015	01/06/20									
1.2	🚖 Perform foundation work and build base	01/07/2016	01/13/20		Perform fou							
1.3	🚊 Install slabs	01/14/2016	02/03/20									;
2	Linitial 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	\times
To *	Walker Scott (Head of Project Office)	1
Start Date *	12/24/2015 📰 🗌 Specify time	
End Date *	12/24/2015 📰 🗌 Specify time	
Comment:		
	Send	Cancel

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).

To Project	Edit	Actions					1	Adm	inistrator	\odot
Cottage		-	Pland - vers	sion 6				Pend	ng Approv	al (Walker S.)
		⊕ , ↔ ⊑=3				*				▼ •
No. Su	bject		Start Date	End Date	Mon 21 Dec 20	15 F S S	Mon 28 Dec 2015 M T W T F S S	Mon 04 Jan M T W T	2016 F S S	Mon 11 Jan : M T W T
1 4	🚉 Obtain constru	uction permits	12/24/2015	02/03/20	on 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 Question	Attachments 🖹 Actions	Sort by Date Date created 12/24/2015 5:08 PM	
Task created (Administ	rator 12/24/2015 5:08:30 PM)	Status	

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 Projec	t Publish E	dit	Actions							A	dminist 9	rator	\odot	
Cotta	ge Construction ((Vincit) F	Project F	Plan - versi	on 7						Ap	prove	d (Walke	er S.)
	viewing the approved version ject plan has unpublished tas				nly after the	project pla	an is published.							×
Plan	IDE About the version	Versions												
+ -	★ X \$ Q, ⊕,		<u>.</u>				۲							- 1
No.	Subject			Start Date	End Date	Mon 21 [Dec 2015	Mon 28 De	2015	Mon	04 Jan 20	016	Mon	11 Ji
NO.	Q			Start Date	Enu Date	MTW	oo F S S	MTW	TFS	SMT	т W	FS	SM	TW
1	🖌 🚖 Obtain construction	permits		12/24/2015	02/03/20	on work	2		_	-		-		

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:

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