

CASE STUDY • ENTERPRISE • COMMON-CODE

ERP/BPM Platform

A microservices platform with common-code architecture for enterprise clients: asset management, document workflow, Gantt planning, banking integrations, GIS

ASP.NET

Entity Framework

Vue.js

DevExpress

PostgreSQL

RabbitMQ

Redis

Docker

Micro-services

Common-code architecture

3+

Banking integrations

Complex UI

TreeListView, GanttDiagram

Multi-tenant

Platform for multiple enterprises

PROBLEM

Chaos in enterprise management

Fragmented systems

Assets in Excel, document workflow via email, planning in separate tools. Data duplicated and out of sync.

Manual document processing

Invoices, contracts, and orders in PDF/Excel were processed manually: data entered by hand, routed via email.

Opaque planning

Task dependencies were not tracked. Shifting one task cascaded through the plan, but managers only learned about it after the fact.

Manual reporting

Financial and operational reports were compiled from multiple sources — days of work and errors.

ABOUT THE PROJECT

Overview

Product	B2B ERP/BPM (multi-tenant)
Industries	Oil & gas, manufacturing, energy
Architecture	Microservices + common-code core
Clients	3+ enterprises on a single platform
Role	Full-stack, architecture, UI, banking integrations

Korobka EAM

One of the platform implementations — Enterprise Asset Management for gas pipeline infrastructure: 212 assets (compressor stations, valves, sensors, main pipelines) with GIS mapping.

Key solutions

01 – Incoming document processing

- | | |
|---|--|
| <p>1 Document intake
PDF/Excel via UI, email, or API. Automatic type detection</p> | <p>2 Parsing
Extraction: counterparty, amount, date, line items, bank details</p> |
| <p>3 Routing
By type and amount: auto-approve, approval workflow, procurement</p> | <p>4 Control
Notifications, deadlines, escalation on overdue items</p> |

02 – Gantt chart planning

FEATURE	DESCRIPTION
Task dependencies	FS, SS, FF, SF – all types with visual connectors
Critical path	Automatic calculation and highlighting of the task chain that determines the minimum timeline
Cascade shift	When dates shift – automatic recalculation of dependents + notifications to responsible parties
Drag & Drop	Drag tasks, change duration, assign resources

03 – Automated report generation

<p>Templating Report builder: drag & drop fields, groupings, filters, formulas</p>	<p>Formats PDF (management), Excel (analysts), CSV (integrations)</p>
<p>Distribution Daily, weekly, monthly via email/Telegram</p>	<p>Types P&L, balance sheet, cash flow, resource utilization, KPI, trends</p>

Korobka EAM — asset registry

An implementation for managing gas pipeline infrastructure. 212 active objects: compressor stations, gas distribution stations, valves, sensors, main pipelines.

The screenshot shows the 'Активы' (Assets) management interface. The sidebar on the left contains navigation items: Панель управления, Газопровод, Реестры (expanded), Активы (selected), Локации, Типы сущностей, Статусы, Проекты, Задачи, Конструктор форм, Рабочие процессы, Отчеты, Аналитика, Файлы, ГИС Карта, Уведомления, Настройки, and Администрирование. The main header includes the Korobka EAM logo, a search bar, a notification bell, and the user 'System Administrator'. The breadcrumb trail is 'Главная / Реестры / Активы'. The 'Активы' section features a '+ Создать актив' button and an 'Экспорт' button. A summary dashboard shows: Всего 212, Активные 212, На обслуживании 0, and Неактивные 0. Below the summary is a search bar and a 'Фильтры' button. The main table lists assets with columns: КОД, НАЗВАНИЕ, ТИП, СТАТУС, and ЛОКАЦИЯ. The table contains 8 rows of demo objects, all with a status of 'in_operation'.

КОД	НАЗВАНИЕ	ТИП	СТАТУС	ЛОКАЦИЯ
DEMO-OBJ-001	Демо Объект №1	compressor_station	in_operation	-
DEMO-OBJ-002	Демо Объект №2	gas_distribution_station	in_operation	-
DEMO-OBJ-003	Демо Объект №3	valve	in_operation	-
DEMO-OBJ-004	Демо Объект №4	sensor	in_operation	-
DEMO-OBJ-005	Демо Объект №5	pipeline_main	in_operation	-
DEMO-OBJ-006	Демо Объект №6	compressor_station	in_operation	-
DEMO-OBJ-007	Демо Объект №7	gas_distribution_station	in_operation	-
DEMO-OBJ-008	Демо Объект №8	valve	in_operation	-

Interface elements

ELEMENT	PURPOSE
Navigation (15 modules)	Pipeline, Registries, Projects, Tasks, Form Builder, Workflows, Reports, Analytics, Files, GIS, Notifications, Settings, Administration
Status dashboard	Total: 212, Active: 212, Under maintenance: 0, Inactive: 0
Asset types	compressor_station, gas_distribution_station, valve, sensor, pipeline_main
Views	3 modes: table, cards, tiles — switch in 1 click

Common-Code core

Common Core

RBAC, CRUD engine, workflow, reports, files, notifications. Updated for all clients.

Configuration

Entity types, fields, workflows, roles, templates — without code changes. No-code builder.

Industry modules

"Pipeline" (EAM), "Finance" (banking), "Manufacturing" (resources).

8 platform modules

Registries

Assets, locations, types, statuses. TreeListView for hierarchies

Projects & Tasks

Gantt + Kanban, critical path, resources, progress

Form Builder

No-code: fields, tabs, validations without a developer

Workflows

BPM engine: visual designer, routing, SLA

Reports & Analytics

PDF/Excel, dashboards, KPI, trends, scheduled distribution

GIS Map

Asset geolocation, routes, zones, layers by type

Files

Versioning, entity linking, full-text search

Administration

Users, roles, audit log, settings, licenses

Technology stack

LAYER	TECHNOLOGIES
Frontend	Vue.js, TypeScript, DevExpress (TreeView, GanttDiagram, DataGrid, Charts)
Backend	ASP.NET Core, C#, REST API, microservices architecture
ORM	Entity Framework Core with dynamic model generation
Database	PostgreSQL + Redis (cache, sessions, notifications)
Queues	RabbitMQ — inter-service communication, documents, reports
Infrastructure	Docker, CI/CD, multi-tenant deployment

Banking integrations

- Statement import: API, 1C, MT940, CAMT
- Payment orders to bank-client
- Automatic document reconciliation
- Multi-currency at central bank rates

UI components (DevExpress)

- TreeListView: hierarchies, lazy-load, DnD, inline-edit
- GanttDiagram: dependencies, zoom, PDF export
- DataGrid: virtual scroll 100k+, master-detail
- No-code builder: DnD fields, conditional visibility

Results

Micro-services

Common-code architecture

3+

Banking integrations

Complex UI

TreeView,
GanttDiagram

Multi-tenant

Multiple enterprises