

DEVELOPMENT OF A SOFTWARE TOOL FOR ELECTRONIC CITIZEN APPEALS TO LOCAL SELF-GOVERNMENT BODIES

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Анотація. У роботі представлено програмний засіб електронних звернень громадян до органів місцевого самоврядування, орієнтований на зручність подання заяв онлайн та прозорість їх розгляду. Рішення забезпечує реєстрацію звернення з категоризацією, прикріпленням файлів та підтвердженням особи заявника, а також надає заявнику кабінет для відстеження статусу і комунікації з відповідальним підрозділом. Для посадовців реалізовано модуль маршрутизації за компетенціями, контроль строків і службові коментарі, що зменшує ризик прострочення та втрати звернень. Передбачено журнали дій і аналітичні звіти за темами, каналами та районами, що підтримують управлінські рішення та планування робіт. Реалізовано рольовий доступ, аудит і базові механізми захисту персональних даних. Запропонований підхід підвищує якість сервісу та підзвітність у взаємодії влади з громадою.

Abstract. This paper presents a software tool for electronic citizen appeals to local self-government bodies, aimed at making online submission straightforward and case handling transparent. The solution supports appeal registration with categorisation, file attachments and applicant identity confirmation, and provides a citizen dashboard for tracking status and communicating with the responsible unit. For officials, the system implements competence-based routing, deadline monitoring and internal notes, reducing overdue cases and lost requests. Operational journals and analytical reports, by topic, channel, and area, enable trend analysis and evidence-based management. Role-based access control, audit logging and baseline personal-data protection mechanisms are incorporated to meet confidentiality needs.

1. Introduction.

Local authorities receive a large number of appeals related to utilities, public services, infrastructure and social issues. When requests are processed via paper forms or unstructured email, citizens have limited visibility of progress, and officials lack consistent prioritisation, routing and reporting.

2. Aim and scope.

The aim of the project is to design and implement an application that allows citizens to submit appeals online, monitor their appeal status, and receive responses, whilst enabling officials to process, control, and analyse the inflow of appeals efficiently. The tool focuses on end-to-end handling: intake, assignment, execution control, and reporting.

3. Functional requirements.

The citizen side includes guided submission forms, category selection, attachment upload, consent handling, and notifications on status changes. The official workspace includes queues, assignment to departments or responsible officers, status transitions, deadline tracking, templated responses and a knowledge base for typical cases. Search and filters support fast retrieval by applicant, address, topic and period.

4. Workflow and routing model.

Each appeal is represented by a unique record with metadata, attachments and a lifecycle state (received, in review, in progress, awaiting clarification, resolved, closed). Routing rules map categories and addresses to units, with manual reassignment permitted under audit. Service-level targets are configured per category to support consistent deadline control.

5. Reporting and analytics.

The reporting module produces monthly and annual summaries: volume of appeals, average processing time, share of overdue cases, resolution outcomes and workload by unit. Dashboards support drill-down from indicators to individual records, which helps identify bottlenecks and recurring issues in specific districts or service areas.

6. Security and data protection.

Given the presence of personal data, the system enforces role-based permissions, separates citizen and staff interfaces, and records critical actions in an audit trail. File storage uses controlled access, and sensitive fields can be masked in reports. These measures reduce unauthorised disclosure and improve accountability.

7. Implementation outline.

The prototype is implemented as a web application with a REST API and a unified database for appeals, status history, assignments and messages. A notification service delivers email and messenger alerts, whilst asynchronous jobs support deadline checks and escalation. The architecture is modular, which simplifies adding integrations (for example, official registries) and extending analytics without changing the core workflow.

8. Testing and evaluation.

Verification is performed through functional scenarios that cover submission, routing, reassignment, deadline escalation, and response delivery, including edge cases such as duplicate requests and missing attachments. Non-functional checks address usability on mobile devices, response time under peak loads and security of file access. KPI assessment focuses on submission-to-registration time, reduction of overdue cases, and the completeness of records compared with manual processing.

9. Conclusions.

The developed MVP demonstrates that a unified electronic appeals tool can improve service responsiveness and managerial visibility in local self-government bodies. Clear routing and deadline control strengthen executive discipline, whilst reporting helps prioritise improvements in public services. Future work includes integration with national eID services, accessibility enhancements and automated classification of appeals using text analysis.