

## **Informational and analytical system for ensuring the protection of the natural environment of Ukraine**

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Informational-analytical system for the security of assistance to the decision (IASZPPR) is recognized for: the implementation of bugatory-internal technology for the selection, processing, saving and analysis of the information of the register of unsafe incomings; giving that appearance of licenses for carrying out activities related to occasions with unsafe wastes:

- grants of special permits for the approval and accommodation of unsafe wastes;
- accumulation and analysis of actual data on the generation and disposal of unsafe wastes.

The security of the operation of the IASZPPR is ensured by means of cryptographic and technical protection of information.

IASZPPR solves the tasks of collecting, processing, accumulating, storing and providing information by creating:

- architectural and topological solutions of multi-level system functioning technology;
- databases for issuing licenses, permits and limits;
- technologies for maintaining a database and register of unsafe wastes and pollutants;
- standardized standard forms of electronic documents for licenses, permits, limits, applications and certificates;
- standard typical forms of data exchange based on XML standard technology;
- software tools for creating, issuing and accounting for licenses, permits, limits, applications and certificates;
- software tools for ensuring information interaction of users and information providers when interacting with database

resources for accounting of licenses, permits and limits based on client-server technology and using a cryptographic information protection subsystem;

- hardware and software means of cryptographic and technical protection of information.

The main functions implemented in IASZPPPR are:

1) formation of an application for the issuance of permits, limits and licenses.

2) issuance of permits, limits and licenses.

3) issuance of permits, limits and licenses.

4) automated maintenance of databases with general information on:

- enterprises that have received licenses;

- enterprises that received permits and limits;

- register of hazardous waste;

- register of pollutants;

5) automated generation of reports (including operational ones) displaying information in the geoinformation system of Ukraine.

6) the technology of maintaining a database of permits for emissions of pollutants into atmospheric air and providing information to the public, namely:

- technologies for forming a permit at the discussion stage;

- technologies for issuing permits for emissions of pollutants into atmospheric air;

- technologies for placing and supporting the information resource of permits for emissions of pollutants into atmospheric air in the global Internet computer network;

- unified electronic formats of emission permits.

- creation and implementation of technological means of automated formation of a database of permits for emissions of pollutants into atmospheric air using Internet resources according to the criterion of compliance with current requirements;

- means of interaction of users with databases of creation and implementation of technological permits for emissions of pollutants into atmospheric air using Internet resources according to the criterion of compliance with current requirements;
  - technologies for maintaining a database of permits for emissions of pollutants into atmospheric air and providing information to the public;
- 7) transfer of the necessary separate or structured information from the database for specified users of the system.
  - 8) protection of information and software resources of the system against threats of violation of requirements of functional services of confidentiality, integrity and availability in accordance with current standards, regulatory documents and legislation of Ukraine.

The main subsystems of the IASZPPPR are: data transport, cryptographic, "Atmospheric air", "Licenses", "Waste", "Macroanalysis".

The main functions of the "Macroanalysis" subsystem:

- preparation of periodic reports on the state of the surrounding natural environment using statistical and predictive models;
- provision of operational reports on the state of the surrounding natural environment;
- display of operational information about the state of the surrounding natural environment in the geoinformation system of Ukraine;
- interpretation of data in the comparative analysis of emissions of pollutants into atmospheric air.