

TABLE OF CONTENTS

<u>1</u>	<u>INTRODUCTION</u>	<u>2</u>
<u>2</u>	<u>MAINTENANCE OF CONTINUOUS OPERATION OF THE APPLICATION</u>	<u>2</u>
2.1	BACKUPS OF THE DATA BASE	2
2.2	ROLES INVOLVING MAINTENANCE OF CONTINUOUS OPERATION OF THE EQUIPMENT AND THE DATA BASE ENGINE	2
2.2.1	ADMINISTRATOR OF THE SERVER	2
2.2.2	ADMINISTRATOR OF THE DATA BASE	3
2.3	MAINTENANCE OF CONTINUOUS OPERATION OF THE APPLICATION – NATIONAL ADMINISTRATOR OF THE SYSTEM (AKS) 3	3
2.4	RECOVERY AFTER A BREAKDOWN	3
2.5	SECURITY POLICY CONCERNING ACCESS TO THE APPLICATION AND DATA	4
<u>3</u>	<u>MAINTENANCE OF COMPLETENESS AND RELIABILITY OF DATA</u>	<u>4</u>
3.1	ASSIGNMENT OF ACCOUNTS IN THE EKOINFONET APPLICATION	5
<u>4</u>	<u>PROCEDURES OF RESPONSES TO ERRORS AND PROCEDURES OF INTRODUCTION OF PATCHES AND UPGRADES</u>	<u>7</u>
4.1	NOTIFICATION OF APPLICATION’S ERRORS	7
4.1.1	REACTION TO CRITICAL ERRORS	7
4.1.2	REACTION TO SERIOUS ERRORS	8
4.1.3	REACTION TO COMMON ERRORS	8
4.2	REPORTING NECESSARY EXTENSIONS OF THE APPLICATION	8
4.3	INTRODUCTION OF PATCHES – TESTING AND INTRODUCTION OF UPGRADES AND NEW VERSIONS	10
4.3.1	TESTING BY THE TESTING TEAM	10
4.3.2	TESTING ACCORDING TO THE SIMPLIFIED PROCEDURE	10
<u>5</u>	<u>ENSURING SUPPORT TO USERS</u>	<u>10</u>
5.1	TASKS OF THE SUPER-USER	10
5.2	TRAINING OF THE USERS	11
<u>6</u>	<u>KEEPING THE SYSTEM’S DOCUMENTATION</u>	<u>11</u>

1 Introduction

The “Market Supervision Base” module is one of the modules of the Ekoinfonet base. As such it is subject to the same procedures of maintenance as the whole application or the server. That is why some of the below procedures is identical to the general procedures used by the IT division of the Chief Inspectorate for Environmental Protection.

The objective of using the procedures for maintenance and operation of the application is:

- to maintain continuous operation of the application
- to maintain completeness and reliability of data
- to properly react to errors and correct them
- to ensure support to users
- to keep system’s documentation

2 Maintenance of continuous operation of the application

Maintenance of continuous operation of the entire application is the task of IT staff from the IT division of the Chief Inspectorate for Environmental Protection.

2.1 Backups of the data base

Backups are taken every day. 5 days a week incremental backups are taken, whereas on Mondays and Fridays full backups are taken. On the last day of the month a full backup is taken. Backups are stored on the server 30 days. A backup to a peripheral device is taken once a month.

A snapshot of virtual machines is taken every day.

2.2 Roles involving maintenance of continuous operation of the equipment and the data base engine

2.2.1 Administrator of the server

The administrator of the server is responsible for the server’s and peripheral equipment’s condition.

His tasks cover:

- inspection of the equipment’s condition and the progress of its wear and tear and “ageing”;
- planning purchases due to material’s wear and tear;
- planning purchases of modules that make it possible to modernize machines and the cooperating equipment.

2.2.2 Administrator of the data base

The tasks of the data base administrator cover:

- tuning of the base, that is among others analysis of statistics and creation of indexes;
- installation of successive versions of the data base engine;
- taking backups of the data base everyday (the last thirty are stored on the server) and taking backups to an external device once a month

2.3 Maintenance of continuous operation of the application – National Administrator of the System (AKS)

The National Administrator of the System's task is most of all to maintain continuous operation of the application and to supervise accounts of the subordinate administrators. Supervision of the account consists in setting up an account in accordance with the proper procedure (item 3.1), collection and storing data of the administrators and cancellation of authorizations if necessary.

The tasks of the National Administrator of the System cover:

- installation of successive upgrades and patches of the application;
- supervision of tables in the Ekoinfonet data base;
- assignment and maintenance of accounts of Voivodship Administrators of the System;
- assignment and maintenance of the account of the Data Administrator;
- assignment and maintenance of the account of Voivodship Data Administrators;
- reacting to reported errors according to the procedure (item 4.);
- keeping documentation;
- participation in testing teams;
- informing users on the condition on the application.

2.4 Recovery after a breakdown

Effective recovery after a breakdown must be ensured by proper selection of the equipment and the data base engine.

Configuration of the server should ensure protection from damage of the equipment, such as a redundant power supply and technology of redundant array of independent disks, for example RAID.

At present the server handling the Ekoinfonet application works on the basis of virtual machines that works parallel, so that recovery of the application after a breakdown is reduced to several minutes.

The data base engine on which the entire application is based must be able to recover the status after the breakdown, end or cancel started transactions. Oracle has these protections.

2.5 Security policy concerning access to the application and data

Access to the Ekoinfonet application is possible only through a specific IP address.

Each user has his/her own login and password. The password must consist of at least 8 characters without Polish special characters. No periodical change of the password is required.

3 Maintenance of completeness and reliability of data

This objective may be fulfilled through assignment of clearly specified roles in the application. The list of roles and their features has been presented in table 1.

Role	Description
The National Administrator of the System	responsible for upgrades of the application, assignment of accounts to voivodship administrators, data administrators, professional administrators, the User of the Chief Inspectorate for Environmental Protection and modification of these accounts, reporting errors notified by the Super-users to the contractor, recording errors after the guarantee period, informing users on errors and patches, keeping documentation and participation in testing
User of the Chief Inspectorate for Environmental Protection	supervision of the inspection cycles register
The Voivodship Administrator of the System	assignment and change of the account of the Planner, Inspectors and operators
Data Administrator	user of the data base (with exclusion of the application) having skills and authorizations to prepare ad hoc reports.
The Voivodship Administrator of Data	using the GENRAP tool and BI tools, using data (read only) with exclusion of the application, publication in Ekoinfonet of prepared and tested reports
The Professional Administrator of the System	modification of dictionaries in the system as a result of consultations with the users. The dictionaries are nationwide, so their contents must take into account needs of all voivodships and at the same time they should contain uniform data; consultation of factual errors.
Market Supervision Administrator	maintenance of the module – reporting to the professional administrator needs related to dictionaries, checking errors and deficiencies reported by users, informing the National Administrator of the System on confirmed errors, recording future needs that will be the basis for creation of an upgrade of the application, notifying the Voivodship Administrator of Data or the Data Administrator about needs related to reporting.
operator	entering data and their analysis

viewing operator	viewing and printing data
Inspector	entering and modification of information on conducted inspections and post-inspection actions
Planner	creation and acceptance of inspection plans

Table 1 Functions concerning maintenance of the Ekoinfonet system

3.1 Assignment of accounts in the Ekoinfonet application

Assignment of roles in the application should be carried out in accordance with determined principles.

The National Administrator of the System is an IT division's employee of the Chief Inspectorate for Environmental Protection. He is appointed by the head of the Computer Systems Division of the Chief Inspectorate for Environmental Protection.

The assignment of an account to the Voivodship Administrators of the System and the Voivodship Administrators of Data takes place on the basis of an e-mail sent from a company address by the direct superior of the candidate.

The Professional Administrators and the Administrators of the Market Supervision Module are reported by the Management of the Chief Inspectorate for Environmental Protection to the National Administrator of the System by electronic mail. The National Administrator of the System sets up accounts for these users.

The accounts of users in individual voivodships are assigned by the Voivodship Administrators of the System.

In the case of operators entering data and operators viewing data an e-mail from the head of the division where the user works to the Voivodship Administrator of the System is required.

The management of the Chief Inspectorate for Environmental Protection appoints a person that will perform the function of the User of the Chief Inspectorate for Environmental Protection in the programme. I send information about it by e-mail or in the form of a memo to the National Administrator of the System.

Managements of the Voivodship Inspectorates for Environmental Protection appoint persons that will be planners in the system. This information is sent by e-mail from a company e-mail address to the Voivodship Administrator of the System in a given voivodship.

The managements of the Voivodship Inspectorates for Environmental Protection in agreement with the National Administrator of the System select persons that can perform the functions of Super-Users. After acceptance by the Head of the Computer Systems Division of the Chief Inspectorate for Environmental Protection the National Administrator of the System assigns to the candidate the role of the Administrator of the Market Supervision Module, which specifies the scope of authorizations in the programme. The Super-user also has other tasks that result from the

assignment of this function (see table 1 and item 5.1).

The assignment of accounts to the users performing the function of the Inspector in the system takes place on the basis of an e-mail sent from a company account by the direct superior of the inspector to the Voivodship Administrator of the System.

Change of the authorizations, that is their restriction, cancellation or their temporary restriction is carried out in accordance with the above described official procedures.

The list of persons assigned to individual functions should be open and published on the Ekoinfonet application's portal, on the portal of PL0100 project or in the Ekoinfonet itself, for example in the knowledge data base and in the system's documentation.

The minimum information that should be made available is shown in table 2.

Function	Name and surname	e-mail/company telephone
Backups		
Server's administrator		
Data base administrator		
National Administrator of the System		
User of the Chief Inspectorate for Environmental Protection		
Voivodship Administrator of the System		
dolnośląskie		
kujawsko-pomorskie		
łódzkie		
małopolskie		
.....		
Data Administrator		
Voivodship Administrator of Data		
dolnośląskie		
kujawsko-pomorskie		
łódzkie		
małopolskie		
.....		
Professional Administrator of the System		
Market Supervision Administrator		
Planner		

Super-user 1		
Super-user 2		
.....		

Table 2 List of persons assigned to the indicated functions

4 Procedures of responses to errors and procedures of introduction of patches and upgrades

4.1 Notification of application's errors

The errors that may occur during the application's operation may be:

- critical errors
- serious errors
- common errors

Each error noticed by the user is reported by e-mail to the Super-user. A screenshot that displays the error and description of the situation containing the following information should be enclosed to the e-mail:

- which element of the software causes the error (that is what options from the menu were selected before the error occurred);
- what data were entered;
- what is the result of the error (message, bad results etc.)
- what actions can be taken after the error (closing the screen, closing the application, restart of the system, closing the computer)
- is the error recurring;
- what are authorizations of the user who was logged to the system at the moment of the error's occurring;

The Super-user is obliged to test and verify the reported error and classify it to one of the groups. The decision must be consulted with other super-users, if any. Then the information on the error is sent to the National Administrator of the System, who takes further actions.

During the term of the guarantee, warranty or assistance the producer's reaction to the above errors is specified in detail in the agreement.

Otherwise the reaction should comply with the below procedures.

4.1.1 Reaction to critical errors

A critical error is an error that makes it impossible to work with the application.

The National Administrator of the System:

- recognizes whether the error is caused by the software or hardware;
- specifies the estimate time of repair;
- sends an e-mail with information on the situation to all users of the system and places information on the situation on the “notice boards” related to the application
- takes proper actions in order to repair the situation, so he repairs the equipment or the system or provides opportunities to repair the code by the producer or another programmer.

4.1.2 Reaction to serious errors

A serious error makes proper operation of portions of the application impossible, that is by means of buttons or options it is not possible to carry out the operations assigned to them.

National Administrator of the System:

- checks the error
- specifies the estimate time of repair;
- sends an e-mail with information on the situation to all users of the module where the error has occurred and places information on the situation on the “notice boards” related to the application
- decides whether the mistake should be repaired immediately or if it may be repaired at the moment of introducing the upgrade or a successive version of the application.
- if the error must be repaired immediately - he provides an opportunity to repair the code by the producer or another programmer;
- if the error may be repaired at the moment of introducing an upgrade or a successive version - he records it in the proper part of the documentation.

4.1.3 Reaction to common errors

A common error is an error that allows further operation of the application. The users should be notified of its existence.

The National Administrator of the System:

- checks the error;
- sends an e-mail with information on the situation to all users of the module where the error has occurred;
- records it in the proper portion of the documentation where remarks to be later used during the nearest modification of the application are gathered.

4.2 Reporting necessary extensions of the application

The necessity to introduce new functionalities or already existing extensions must be notified to the Super-User by the heads of respective divisions. The Super-user consults needs with other Super-

Users if any and with the Professional Administrator. If he finds a patch justified he sends its proposal to the National Administrator of the System, who places it in the documentation, among remarks to be taken into account during the nearest modification.

4.3 Introduction of patches – testing and introduction of upgrades and new versions

Depending on the number and quality of patches the National Administrator of the System takes a decision whether a testing team should be appointed or testing can be carried out according to the simplified procedure. If the testing's result is negative the National Administrator of the System reports to the producer the remarks reported by the testing persons. In the case of a positive result a new version should be implemented on the production version.

After the production launch the National Administrator of the System informs by e-mail all interested users about it and places information on the situation on "notice boards" related to the application.

The National Administrator of the System completes the documentation by entering information on corrected or new functionalities, unless the producer has not provided such documentation.

4.3.1 Testing by the testing team

The testing team is appointed by the Management of the Chief Inspectorate for Environmental Protection in agreement with the Head of the Computer Systems Division of the Chief Inspectorate for Environmental Protection.

The testing team should at least be composed of the following persons:

- The National Administrator of the System
- Super-Users
- final users (performing roles related to introduction, modification and analysis of data), who will use the introduced patches, from at least two voivodship inspectorates

4.3.2 Testing according to the simplified procedure

After reception of a patch from the producer the patch is tested by:

- The National Administrator of the System and after completion of the tests by:
- The Super-User and the Professional Administrator. The result of the testing is sent to the National Administrator of the System, who takes actions like in item 4.3.

5 Ensuring support to users

5.1 Tasks of the Super-User

The Super-User is appointed by the Management of the Chief Inspectorate for Environmental Protection. The Super-User is NOT an IT expert. It is a professional, advanced user who has

specialist knowledge of the issues related to the application (in the case of the module supporting performance of inspections – knowledge of planning and carrying out inspections) and who has an excellent command of all options of the application. In the application he should have authorizations at the (for example Market Supervision) Module Administrator's level.

The tasks of the Super-User cover:

- performing the function of a consultant, who explains questions and doubts of the users reported by e-mail or telephone;
- verification and classification of reported errors, contact with the Professional Administrator, submission of descriptions, if these actually relate to errors, to the National Administrator of the System;
- verification of suggested extensions, consultations with the Professional Administrator, submission of information to the National Administrator of the System;
- participation in testing patches and extensions;
- carrying out training during the use of the application, if needed.

5.2 Training of the users

The training is conducted by the software producer after introduction of new modules. It should be conducted on three levels of detail and intensiveness:

- for administrators,
- for super-users,
- for final users.

If, during the use of the application the head of the division considers it necessary to carry out training for users he should notify the National Administrator of the System about it. If a sufficient number of persons is gathered (determined for example on the basis of the capacity of the IT training room) and the Management of the Chief Inspectorate for Environmental Protection decides that training should be carried out – this training will be conducted by the Super-User.

6 Keeping the system's documentation

The system documentation should contain:

- technical documentation and user documentation submitted by the producer of the software;
- register of serious and common errors that do not have to be corrected immediately;
- register of extensions and changes of functionalities that do not have to be introduced immediately;
- description of changes introduced in successive versions;
- complements to user instruction manuals after introduction of changes in the system;

- list of persons performing proper functions in the system (model – table 2).

The documentation is collected, created and kept by the National Administrator of the System. The documentation should be kept in digital and paper form along with a register of dates and persons introducing changes to it in the form shown in table 3.

The enumeration of documents' versions should take place according to the generally accepted principles (in most cases used for enumeration of software version), that is number of the version (dot) number of patches in the version.

HISTORY OF THE DOCUMENT'S VERSION

NO. OF VERSION	DATE OF VERSION (d-m-y)	CHANGES INTRODUCED BY	DESCRIPTION

Table 3 Register of changes in the documentation