

CLASSIFICATION FUNDAMENTALS
OF CARTHOGRAPHIC ENVIRONMENTAL
MONITORING

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Abstract

A natural classification is suggested of environment elements. The main classes are singled out: territories, objects and phenomena.

The grouping of elements into these three classes is effected by means of facet and hierarchic classification.

In the present report we give our understanding of classification as the division of the multiplicity of environmental elements into classes according to the feature common for this class.

Monitoring of the environment is understood as a system of complex investigation including the definition of whereabouts, appreciation and prognostication of the states of environmental elements.

The subject-matter of investigation is presented by the environmental elements which are understood as territories of residential areas as well as other territories, objects situated on the territories and phenomena occurring in certain localities.

Classification, first of all, is destined for creating data-bases in geographical and cadastre information systems.

The environmental elements classification is based

on the most common substantial features which allow to define these elements as independent classes. The main characteristic feature of division of elements is their very essence. It is to be taken into consideration that these elements have certain spatial situation and geodesic closure for their further reflection on topographic maps and code signification^{fi} for their identification and representation in the data-bases.

The questions connected with methods and technologies of monitoring of environment are not regarded in this report.

As the bases of classification are taken substantial features which are defined by the very nature of the following environmental elements. And, for this reason, the suggested classification is natural. The natural-essential approach to the classification allows to simplify it and make it convenient for users.

In the suggested classification are foreseen hierarchic and facet principles of classification.

First of all, the whole information about the environment is divided into three classes: territories, objects and phenomena. This is the first level of classification division. In this case, as a basis of classification division can be considered the community of physical characteristics (the essence) of information elements in each class which allows to consider each class as a separate system of information that differentiates it essentially and unambiguously from any other class.

The facet system of classification is used for the first level.

The principles of constructing the following levels of the above-mentioned three classes are as following:

I. Territories. The second level of classification

of information for each class of territories is its division into categories of information. In this case, the basis of classification is the type of land, water or plant covering of territories or the species of objects or phenomena which are situated thereon or occur on these territories.

The facet method of classification is used in this case. All the territories are divided into the following main categories:

1.1. The territories of lands under points and centers of topographic-geodetic basis.

1.2. The territories of settlements.

1.3. The territories of lands destined for agriculture.

1.4. The territories of lands that are used for opened workings of quarries and mines.

1.5. The territories of peat extraction.

1.6. The territories occupied by lands around the mansion (house).

1.7. The territories of woods and wood-covered lands.

1.8. Territories of other objects connected with them.

1.9. Territories covered by vegetation which have not entered into other categories.

1.10. Territories under borders, hedges and fences.

1.11. Territories of stone localities.

1.12. Territories of zones and areas of widely-spread phenomena.

1.13. Territories not included in other categories.

The given classification of territories agrees with the standard statistic Classification of Land Use of the European Economic Commission, the Economic and Social Council of the United Nations Organization.

Hierarchic and hierarchic-facet methods of classifications are used in further division of information

territories into groups.

II. Objects. The second level of information elements for this class is its subdivision into the following categories:

2.1. Elements of topographo-geodetic basis.

2.2. Settlements.

2.3. Houses and constructions.

2.4. Terrain. Geological, geomorphological and hydrogeological objects.

2.5. Water objects and those connected with them.

2.6. Vegetation covering.

2.7. Borders, hedges and fences.

The basis of classification and information elements of the class "Objects" is the community of their physical peculiarities.

The division of information elements into categories of the class "Objects" is effected by the facet method and inside the category - by the hierarchic and hierarchic-facet method.

III. Phenomena. The second level of classification of information elements for the class "Phenomena" is their division into two categories. Their origin is taken as the basis of classification. The facet method of division of information elements is used in this case.

Thus, the phenomena are divided into two categories:

3.1. Natural origin.

3.2. Antropogenic origin.

Further, the categories are divided into groups by the hierarchic and hierarchic-facet methods.

The use of such a system of classification, in our opinion, will allow to use it for creating the data-banks of information systems of divers destination.