

CREATION OF MODERN KINDS OF THE DIGITAL INFORMATION ABOUT DISTRICT ON THE BASIS OF THE UNIFIED TECHNOLOGIES. CONCEPTUAL DIRECTIONS

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The modern period of development of the state is characterized by the raised (increased) need (requirement) for the urgent, authentic, duly and all-round digital information on district (DID), created on materials of remote sounding of the Earth (RSE) and necessary for the qualitative decision of a wide circle of tasks.

The existing geoinformation systems and technologies ensuring process of creation of geodetic and cartographical production, function mainly independently and are in most cases incompatible with each other. It results in essential distinctions in the metric and semantic description of spatial objects, use of various formats of representation of the data at creation DID, and also glut of manufacture by means of automation ensuring processing close on structure and the contents, of the close on

The sharp necessity for unification of technologies of creation of modern kinds DID has ripened with the purpose of realization of the following tasks:

- maximum to automate processes of creation of modern kinds DID in view of conducting continuous topographical monitoring on materials RSE;
- transition to uniform (nation-wide) rules of display DID and uniform code classification of the spatial data;
- optimization of processes of mutual transition (converting) from the various specialized software and products used for creation of modern kinds DID;
- reduction of the cost price of production;
- increase of productivity of work.

Were based on that any technology is set of stages both processes and their information, methodical, technical, mathematical and организационно-technological maintenance, the basic conceptual directions of creation of modern kinds DID are developed:

1. Creation of system of the unified conventional signs.
2. Unification of the terms and definitions of modern kinds DID.
3. Development of methodology of creation DID on materials RSE.

Creation of system of the unified conventional signs.

The maintenance of unity of the approach to creation and use DID in all spheres of defensive and economic activity is possible under condition of creation of the uniform unified conventional signs for all types and scales of digital state topographical cards, plans of cities and other kinds DID.

The basic requirements to conventional signs:

- стандартизация;
- an invariance during the long period;
- compatibility of the subsequent versions with previous.

Now at creation, updating, preparation for the edition and edition of digital state topographical cards and other kinds DID the conventional signs, samples of fonts and conditional reductions of the signatures developed and issued in 1963 with the repeated edition in 1973 and 1983, " obligatory to application are applied at creation and updating of topographical cards by all departments and establishments USSR ".

The development of the automated technologies of creation and updating DID, occurrence of new kinds DID, wide use of materials RSE, and also absence as a result of geopolitical development of the country actually " of departments and establishments USSR ", requires (demands) constant perfection of a basis of display DID and unity of code classification of the spatial data.

The development of the unified conventional signs is a necessary and sufficient condition of creation of uniform information space for qualitative functioning of программно-means using DID.

It will allow to proceed (pass) to uniform (nation-wide) rules of display DID and uniform code classification of the spatial data, significant will facilitate processes of mutual transition (converting) of the

various specialized software and products used for creation of modern kinds DID, will raise productivity of work and will reduce the cost price of production.

Unification of the terms and definitions of modern kinds DID

The increase of efficiency of application of various technologies of creation of modern kinds DID is defined (determined) not only degree of automation фотограмметрических and cartographical processes, but also degree of unification of the requirements to created production.

At creation of modern kinds DID on materials of remote sounding of the Earth a role of information cartographical maintenance essentially grows. In a basis of information maintenance lay used in geodetic and cartographical activity ГОСТы, basic of which the Terms and definitions "are".

At the present moment the rule(situation) takes place, at which the same kind DID various departments name on any other business (for example: in Roskartografiy a digital state topographical card (DSTC), and in the Ministry of a defense of Russian Federation - electronic topographical card (ETC) are created under the same requirements with identical semantic understanding). The given problem basically is decided(solved) in the project of the technical rules " About the requirements to geodetic and cartographical production, materials and data, their manufacture and realization " by a way of creation in Russian Federation of a legislative basis for technical regulation in sphere of a geodesy and cartography on the basis of maintenance of unity of measurements during creation both reference(manipulation) of geodetic and cartographical production, materials and data.

Major consequences of acceptance of the named technical rules should become elimination of unreasonable administrative obstacles in enterprise activity, legislative maintenance of unity of the requirements to geodetic and cartographical production, processes of its (her) manufacture (creation), storages and transfers to usage in Russian Federation in sphere of a subject of regulation of the future law.

Development of methodology of creation DID on materials Д33.

The various specialized software and products developed, as foreign (Mapinfo, Arcinfo, AvtoCad etc.), and domestic ("Neva", "Panorama" etc.) manufacturers are applied to creation of modern kinds DID.

Thus actually technologies of creation of a separately taken kind DID with use of the various specialized software and products essentially have not enough, than differ. In particular " the Technological circuit both the description of technology of creation and updating ETC on materials of air and space photographing " does not vary during last 15 years and consists of the following basic stages:

- redactions-preparatory works;
- the entrance control of materials;
- transformation of the initial analog information in facsimiles the form;
- quality surveillance просмотра of representation;
- creation (updating) of a mathematical and geodetic basis;
- transform facsimiles of the images;
- creation digital ortofotoplan;
- vectorizaci of objects NL ETC, and preliminary data processing;
- updating NL ETC;
- creation of spatial - logic communications(connections);
- the control of completeness, accuracy and reliability ETC;
- the report NL ETC;
- acceptance NL;
- scheduling of processes of creation NL;
- a storage ETC;
- distribution to the consumer.

The requirements to a digital state topographical card (DSTC), created Roskartografiy, and electronic topographical card (ETC), defense, created in The ministry, of Russian Federation, as it was marked above, are identical under the contents and include in a complex elements of creation of a digital card, electronic card and digital model of the publishing original of a card.

The change of methodology of creation of actually digital state topographical cards and in particular of digital model of the publishing original of a card (DMPOC) is offered, as final product and as one of the strategically important kinds DID, that is technologically to divide(share) creation DMPOC into three basic stages, with simultaneous reception of independent kinds DID:

a) Creation of digital model of district on materials of remote sounding of the Earth. Thus definition and vectorization, including automated on the basis of application of modern technologies and the unifications of information cartographical maintenance, are exposed all seen elements of the contents, in view of uniform code classification of the spatial data about which was spoken above, without the account of concrete scale, in the beforehand established system of rules of the digital description of objects. Besides at the given stage the base of the spatial data as set of the spatial data organized by certain rules, establishing(installing) general(common) principles of the description, storage and manipulation by the data intended for satisfaction of information needs(requirements) of the user technologically interconnected with the received vector component of the spatial data is created.

б) The automated creation of digital cartographical model, visibility or prepared to visualization on the screen by means of display of the information in the unified system of conventional signs, which contents corresponds(meets) to the contents of a card of the certain kind and scale. Thus unification of conventional signs and rules of the digital description of objects will allow with the minimal expenses to pass from one kind of production to another, and also to use the automated processes unification (mapcompose) for reception of derivative scales.

в) The automated creation of digital model of the publishing original of a card with an opportunity of transition to the previous kind DID, that will allow to decide(solve) a problem of the integrated approach to processes of the subsequent edition DID.

The given technological circuit is represented to most expedient in light " the Concepts of formation and development of uniform information space of Russia and appropriate state information resources " 1995 and " the Concepts of creation and development of an infrastructure of spatial given Russian Federation ", approved by the order of Government of Russian Federation from August 21, 2006 № 1157-р.

For achievement of the maximal economic benefit and manufacture of qualitative production the accent(stress) is frequently done(made) on purchase high technological, expensive equipment, attempt of automation cartographical processes.

The decision of tasks on offered above conceptual directions of creation of modern kinds DID on materials RSE will allow by the minimal expenses to ensure(supply):

- The increase of opportunities of information maintenance of activity in the field of a geodesy and cartography by means of granting more complete, urgent and authentic information about spatial objects, that will promote increase of quality both efficiency of use of materials and data created as a result of realization of geodetic and cartographical activity;

- Decrease(reduction) of the budget charges as a whole at the expense of unification of information, methodical, technical, mathematical and technological maintenance of geodetic and cartographical works on creation and use of the spatial data;

- Access and use of the spatial data by bodies of state authority of Russian Federation by uniform rules.