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DIGITAL TECHNOLOGIES WHEN PERFORMING WEIGHING CALCULATIONS

Mirkhanova Mavjuda Mikhailovna, Mustafoyev Eldor Ilkhom Uglu,
Karakhanov Jamshidbek Jahongir Uglu
Tashkent State transport University

Abstract

The use of modern software complexes Credo, Robur, MXRAIL (Bentley Systems) and GeoniCS in the design of railway repair in Uzbekistan allows you to choose the bottom and top elements of the railway and choose the most technologically-economically optimal option.

Keywords: Credo program, rail design, GeoniCS program, Credo TOPOPLAN, Credo DAT, Credo road, mxrail (Bentley Systems) Program, ground Polo, mxdraw module, Credo system, platforms, Autodesk, AutoCAD, AutoCADCivil 3D, Functional new projects, ROBUR software complex.

Railway infrastructure facilities, i.e. railway track, land polotnos, which are a complex technical system in the students of the design of railway repair in Operation; Provide for the repair of various water-carrying structures, bridge bridges and tunnels and the elimination of capacity increases. By the 21st century, the use of modern technology marks the main directions of increasing the performance efficiency and technical progress of railway transport.

The developed countries are using the modern software complexes Credo, Robur, MXRAIL (Bentley Systems) and GeoniCS to select the parameters of the main objects of the railway infrastructure, conduct economic exploration, use, calculation and selection of permanent devices and facilities of Railways.

All these computers are suitable for the development of projects for reconstruction (modernization) and repair of Railways.

Credo software complex. Credo software complex-designed for the design of highways, but in modern practice is also used for the design of Railways. The Credo system includes a number of software packages, including:

Credo TOPOPLAN - the creation of a digital land model and the issuance of topographic plans; Credo DAT - ground and satellite geodetic data processing; Credo road-the design of new construction and reconstruction of suburban highways, railways, city streets and highways of all technical categories; and are also software tools for solving a number of related tasks.

Credo is fully equipped with software to solve design tasks behind the work with only the construction of Railways and the calculation of the volume of road sections. The Credo system is being used to project institutions of leading states as a means of developing projects in the rail sector.

Mxrail (Bentley Systems) Software complex. The mxrail software complex was developed in the United States and is designed for the design and reconstruction of structures of all types of rail transport. In the design work of Railways, it is carried out from the creation of a three-dimensional spatial model and the formation of project documentation-drawings and minutes of the projected object.

MXRAIL provides the following capabilities in the design of new railways:

- ✓ design of rail tarx;

- ✓ design railway longitudinal and kundalang trim;
- ✓ design of ground floor structures;
- ✓ allows you to use regulatory documents from the waiting room of the program to automate the design of conductors and intersections.

When designing the reconstruction and repair of a railway track, the initial data is obtained from the following data: along the axis of the track, along one railway, along two rails. The choice of the parameters of the plan elements and the longitudinal ridge of the existing path is carried out through regression analysis (method of Least Squares). Restoring the geometric parameters of the plan elements and the longitudinal profile, taking into account the specified error, the selection of which is performed interactively. The deformations of the road in the plan and the longitudinal Ridge are analyzed. According to the project solution, it is possible to obtain a report on the relative deformations of the existing path. The project documentation is completed in the form of Excel tables, the 3D model automatically generates and contains tables and reports: the amount of work on the upper structure of the track, the amount of soil (taking into account the cutting of the plant layer), the amount for removal in nature, etc. Drawings and sections on plans, ridges, combined plans and ridges are automatically drawn and displayed using the mxdraw module.

Using the mxrail software complex, the railway allows infrastructure management, the creation of a common database for all work on the line, and analysis in several options for track maintenance. With the help of the MXRAIL software complex, the states of South Korea and Taiwan have been widely used in the design of high-speed railways. Until now, this software complex has been widely used in the reconstruction of the Railways of these states.

GeoniCS software complex. GeoniCS software complex is designed for railway project, focused on internal technologies and project traditions. The platform uses AutoCAD and AutoCADCivil 3D products from Autodesk. GeoniCS functionality includes support for adopting solutions to a new project, including reconstruction and maintenance of existing railways. With this program, the design of railway curves and its use in changing the curves of existing railways will give a good result.

ROBUR software complex. The ROBUR software complex is a program developed in Russia that models the design of a railway or its stations based on its spatial digital model. The ROBUR software complex is represented by three windows (trax, buylama Ridge, and kundalang Ridge). These three windows make it easy to choose the most optimal options, depending on the complex conditions of the railing, the construction and the trimming of the loggia. Choosing the most optimal option from several options in the design of the repair of Railways plays an important role in the justification of investments.

In conclusion, it can be said that the use of modern software complexes Credo, Robur, MXRAIL (Bentley Systems) and GeoniCS in the design of railway repair in Uzbekistan allows you to choose the bottom and top elements of the railway and choose the most technologically-economically optimal option. With this in mind, all students are required to include and widely use modern programs such as Credo, Robur, MXRAIL (Bentley Systems) and GeoniCS in science programs.

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