

## **Abstract**

of attestation master's degree work

on subject:

" Features of building Web-based complexes Schematic design"

by

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### **Actuality of the work**

Today there is a tendency of sharp reducing of time an output device to the market since the development, which entails a reduction of the time for the design. At the same time we talk not only about changing speed production of new devices, but about the overall complication applicable technologies and device structures. In this regard exist the actual task of reducing time spent in all stages of production, from design to implementation of the latest test for device.

In this paper we will consider funding for the organization of productive work teams of developers circuit solutions based on the CAD system with a Web interface as well as easy access to high-performance hardware, which, for example, are multi-processor computing systems (MCS).

### **The purpose of the work**

The aim is investigation of building Web-based complex circuitry design and development of algorithmic support needed to enable secure remote access to the package Allted.

## **Tasks solved in work**

1. Investigation of existing CAD systems in terms of types of access.
2. Investigation of architecture of the existing web-based CAD system and the interaction of their components
3. Analysis tools and remote access technology that can be used to organize Web-based access to CAD.
4. Develop requirements for full featured Web-based access to the CAD definition of the structure and components of the developed software.
5. Implementation in practice, the mechanism of access to web-CAD package example Allted.

## **The achieved results**

Solving the tasks put in-process, an author protects:

- results of an investigation of existing CAD systems in terms of type of access;
- results of an investigation architecture of the existing web-based CAD;
- analysis tools and remote access technology that can be used to organize Web-based access to CAD;
- a list of developed requirements for mechanism of Web-based access to CAD;
- practical implementation of Web-based access to CAD Allted;

## **Scientific novelty**

The scientific novelty of the work consists of the following:

- were analyzed the problems of using CAD packages distributed development teams;
  - were analyzed existing architectures mechanisms for web access to CAD;
  - was created the architecture of a mechanism to provide remote access that meets the requirements:
- Combining different hardware in a single infrastructure.

- Scalability allows to dynamically allocate computing power.
- Ensuring the reliability and resiliency of the design process.
- Ensuring security and privacy
- storage, access and processing of large volumes of information without having to physically move between computing resources.
- Heterogeneity.

## **Practical value**

Practical value of work consists of the following:

- On the base of the work of research and analysis technologies, practically implemented a new mechanism of working with CAD Allted via web-interface.

## **Conclusions**

1. Was made review of existing CAD systems, identified the main of them by type of interaction with the user and the presentation of data, access types to CAD.
2. Was investigated the structure of existing web-based CAD systems and mechanisms of interaction between their components.
3. Were analyzed existing tools for remote access technology to create interactive Web applications as well as databases, pushed and considered in detail the requirements for full featured Web-based access to the CAD.
4. The result of the work was the implementation web-access to CAD Allted, which greatly simplifies the installation and operation of the software, as well as solves the problem of performance of local workstations through the calculations to powerful computational resources.

The work contains 65 p., 16 images, 23 sources.

**Keywords:** CAD, WEB-ACCESS, WEB-INTERFACE, ALLTED.