

# Forming a User Function Dynamic Library for ALLTED CAD Software

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**Abstract** – The problems of creating a user function library to support ALLTED circuit design software functioning in the multiuser mode with a remote launch possibility on the basis of CAD systems architecture development methods are considered

**Keywords** – ALLTED; web-system; CAD; CAE; online simulation

## I. INTRODUCTION

The progress of computational means' efficiency and a variety of their architectures, increasing a number of devices connected to the Internet, creation of the virtual developer groups and virtual organizations lead to the review of the engineer's workstation conception. Using possibilities of grid- and web-technologies to form a virtual workstation requires a review of CAD software architecture, separate components interaction mechanisms, a presence of the tools of user identification and personal data maintenance.

## II. SIMULATION SYSTEM REMOTE LAUNCH

One of the CAD software selection criteria is not only a presence of analysis tools required but a presence of possibilities to form user model libraries, to provide non-linear functions, goal functions at the parameter optimization stage etc.

While the tools to work with libraries are standard de-facto for circuit design systems, working with non-linear functions requires usually an intervention directly to the package's source code according to the inclusion algorithm of new types of functions. The mechanism in question is not a critical one under an individual package using but is not suitable for remote access organization, for example, by means of web-technologies.

A remote launch requires the enhanced safety precautions since there is a potential harm for the party providing a service. So, it is needed to provide the tools for user to form functions without direct access to the source code.

To provide possibilities of controlling and editing user functions, it is needed to keep source code fragments. Having the simulation system launched, library file's source code forms out of functions' code fragments, and then its compilation fulfils.

The scheme of launching simulation system ALLTED [1, 2] and interaction with the user function library database is presented on Fig. 1.

Creating a separate launching folder is caused by the necessity of files separation under the simultaneous execution of some tasks of a user.

A presence of the dynamical function library allows using a single simulation system's executable file without the necessity to create its exemplars for each of the users.

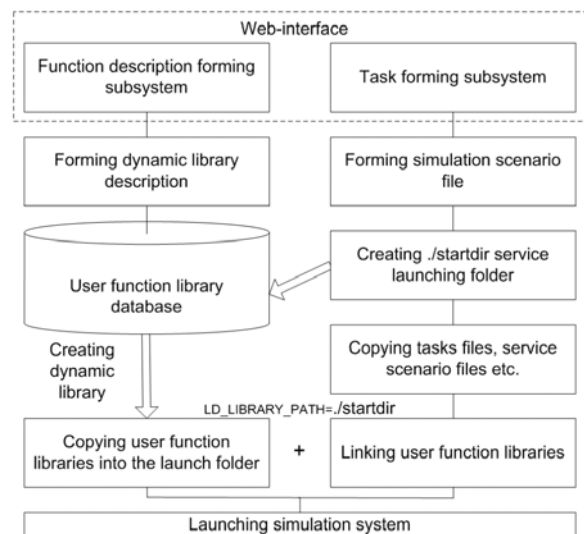


Figure 1. Simulation system launching scheme

## III. CONCLUSION

The mechanism developed to form a user function library allows providing a multiuser mode of the software usage without significant modifications of its source codes giving a possibility of usage and adaptation of this software to the tasks of various subject areas.

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