The Combined Approach to R-technology Innovation

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Abstract: Tow methods of R-technology innovation are considered: - the addition of appropriate component of R-tehecnologi to existing CASE systems;- the elaboration of the CASE system for creation a complex application by means of more developed R - methodology and R-CASE.
Keywords: design automation, CASE systems, workshop proceedings, R-technology.

1 The need in R-technology innovation

The modern CASE system offers the possibilities to automate the description of a model of complex application by means of a large static part, to elaborate enough detailed plan of implementation of a future application and to elaborate a good technical documentation for an application.

The structural CASE system offers the possibility to represent the model of application by means o modules [1-3]. As a rule, the elaboration of modules is realized by programmers.

The OO CASE system offers the possibility to represent the model of application by means o components and classes [3]. The selection and realization of the methods of classes is done by programmers.

Thereby we must mark the following:

1) The absence of instrumental facilities for automated design of a static part of the complex application.
2) The clients can't participate active in elaboration of static parts.

From above-stated we can do the following conclusions:

1) It needs to create the instrumental facilities for automated design of a static part of the complex application and include it as a part of a CASE system.
2) This instrumental facility is to be mastered in out of the university.

The analysis of different instrumental facility for visual modeling of simple Software Products (SP) which can be integrated into CASE system shows that the R-technology is more appropriate [4,5].

2 Current state of R - technology

The ideas of R - technology were elaborated by the group of specialists from AS of USSR. The leader of this group becomes the academician of AS of ANU Velbitskiy I. V. R- technology proves their power already in 1985. At that time the countries of Council for Mutual Economic Assistance accepts to develop their information technology base on R-technology. At present the specification of R – technology a defined by the international standard [5].

The base of R-technology consists of a graphical method of data processing presentation. Within of this technology was elaborated very simple graphical notation for their mastered and application. The presentation of data processing by means of this notation was called R-schemes. The set of this graphical notations together with the some basic construction (branches, cycles, etc.), constructed by means of other notation and construction, was named "language of R- schemes". And the set of rules defending the order of R-schemes construction we named "R-methodology"

Primarily the R- technology is carrying out by hand and it brings appreciable results in development of USSR rockets. This success was studded and appreciated by international specialists.

After USSR dissociation, the attention to R – technology weakens, but the authors of this technology continue their development and I am one of specialist who supports them.

We consider that R-methodology may be innovated and it may be very useful in SP development.

3 The principles of combined approach to R-technology innovation

The innovation o R-technology may be done by several methods: - by extension of the language of R-schemes; - by addition to existing CASE systems a new subsystem which will modeling modules and classes; - by creation a separate CASE system with the input language "language R-

schemes". These innovations will demand the comprehensive analysis of potential capability of R-technology and methods of their implementation.

The superficial analysis of R-technology permits to mark some opportunity, which can improve it:

- The facility for specification of parallel processes are weakly developed;
- Graphic Editor don't execute correct their function:
- Etc.

3.1 Particularity of language R-schemes extension

1) The language must permit the integrations of complex programs.
2) The language must permit handling of complex data structure.

3.2 Particularity of the R-schemes editor

1) The output of editor must be as R-scheme file, as a XML file or program listing or file.
2) The editor must be easy integrated to existing CASE systems.

3.3 General model of CASE system with the input language of R-scheme

The General model of CASE system with the input language of R-scheme is showed in the Fig.1.

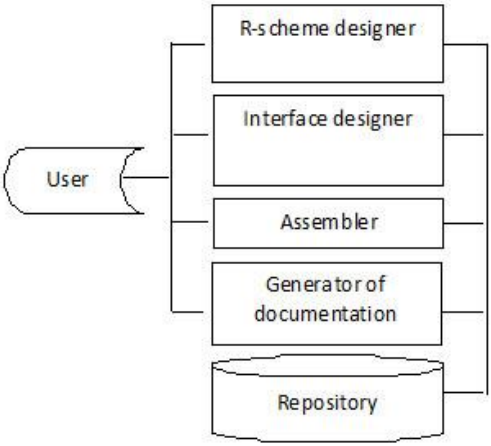

Figure 1. General model of CASE system with the input language of R-scheme.

In this model:

1) Subsystem "R-scheme designer" intend for R-scheme creation.
2) Subsystem "Interface designer" intend for creation of application interface.
3) Subsystem "Assembler" intend for creation of application.
4) Repository intended for saving all artifacts of applications.

4 Conclusion

In this paper two methods of R-technology innovation are described. The implementation of the first of them is cheaper but it is enough efficient. The implementation of the second method is more expensive and may have a great importance on it orientation to solving of a complex class of problems.

Acknowledgments. I wish to thank my colleagues who actively participated in the analysis of the possibilities of R-technology innovation.

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