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CASE Tools for IT-System Integration

Abstract

The article deals with the compare of standard and new suggested information system (IS) development logical stages. Standard and suggested stages are integrated, new CASE-tool is developed for high-quality IS development in the shortest terms support. The work includes some new and fundamental approaches and suggests specific concepts to IS development.

Keywords: integrated environment, CASE-tools, information-computation recourses development

Introduction

Successful and purposeful enterprise work is impossible without flexible information systems (IS) implementation to their functionality. While complex IS development, the business-process description, workflow processes and network data exchange support, processes execution computer-aided management and software components integration became the most important and topical tasks to be solved. For these purpose quite widespread and convenient CASE-tools are used.

Discussed approach

Nowadays it's impossible to imagine modern IS development, implementation and maintenance realized by only one specific type of software tool. Great variety of functions implementation for the system functioning needs several software tools integration into unified and specific software complex. The suggested approach is oriented on network distributed applications development, as the most progressive and useful direction in the variety of application programs. Modern, advanced and complex IS realization make the demand for new generation development and support tools. The integrated environment concept as such software tool makes a subjects of the paper. Article also contains new approaches to standard software development [1]. The research fields are: system architecture of distributed applications, information-telecommunication environment, problems and proposed methodology of the IS development, requirements to the developed platform and basic application platform tasks [2]. The detailed description of the main concepts, such as forms, functions, and principles of their interconnection, forms-functions tree (FFT), forms-

functions graph has been already made [2]. Standard IS development stages are compared with the modified ones, including considerably new approaches, providing new quality and level of IS development. Improved “Draft & Preliminary Design” on the basis of standard one is shown on the Fig.1. IS implementation is integrated with early testing (Fig. 2.). Maintenance is based on the database together with optimization tool functioning (Fig. 3).

Demo mode

Among the earlier suggested IS runtime modes: demo mode, debugging, and deployment [2], special attention is paid to IS demo mode, which means system prototype development. The success of the further development considerably depends on this stage. Its suggested realization is on Fig.4.

The main figure in the represented development stage is Customer. He fixes forms and functions interfaces, the way of their interconnection, and their parameters. As the result of such determination, customer would see IS prototype, which includes system interfaces and IS functioning model. The tool for IS prototype development is developed “FFT Designer” [3]. The advantage of system prototype development is requirements, system interfaces and function scenarios setting and changing according to customer needs without coding. As the result – smaller time and financials costs of development process.

Database development

The whole project is supposed to be represented in project database. It is necessary to find some useful and practical solution for the project database development. Is is suggested to create database structure according to the development stages (Fig.1,2,3). Database is to contain every development stage data and result. Such structure and optimizing tool application provide developer with **small-cost system reengineering**.

The second idea, connected with project database is 2 outer sub-schemas of database structure. The first one is Corporation Team Development Database. It supports project development independence from developers (participants) and time and also provides project integrity. File Form Database for Every Participant of Development Team is the second one. It provides project parts portability, every part and development step time and place independence.

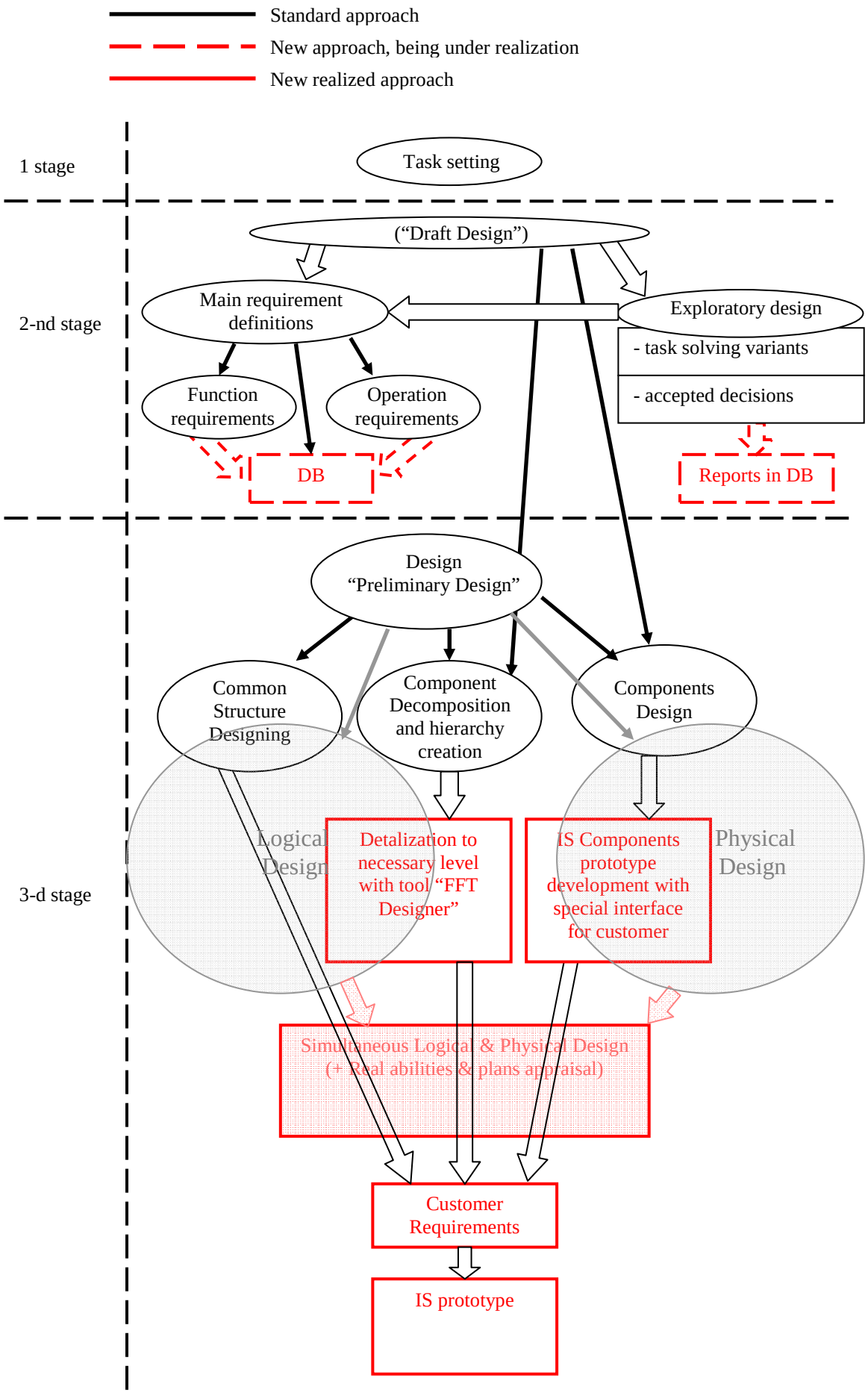

Figure 1.Standard and modern "Draft & Preliminary Design"-integration

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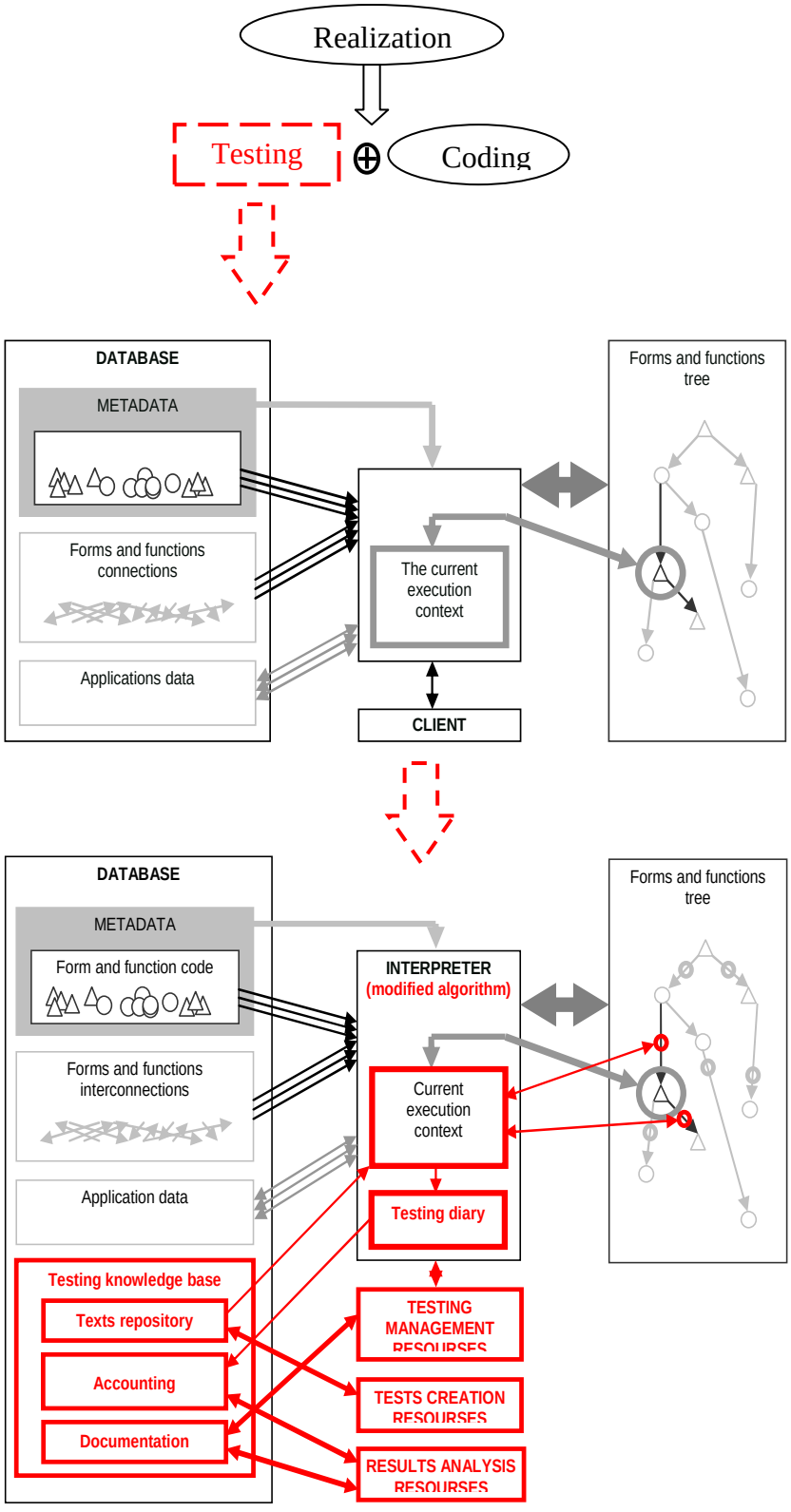

Figure 2. Standard and modern approach to IS realization stage

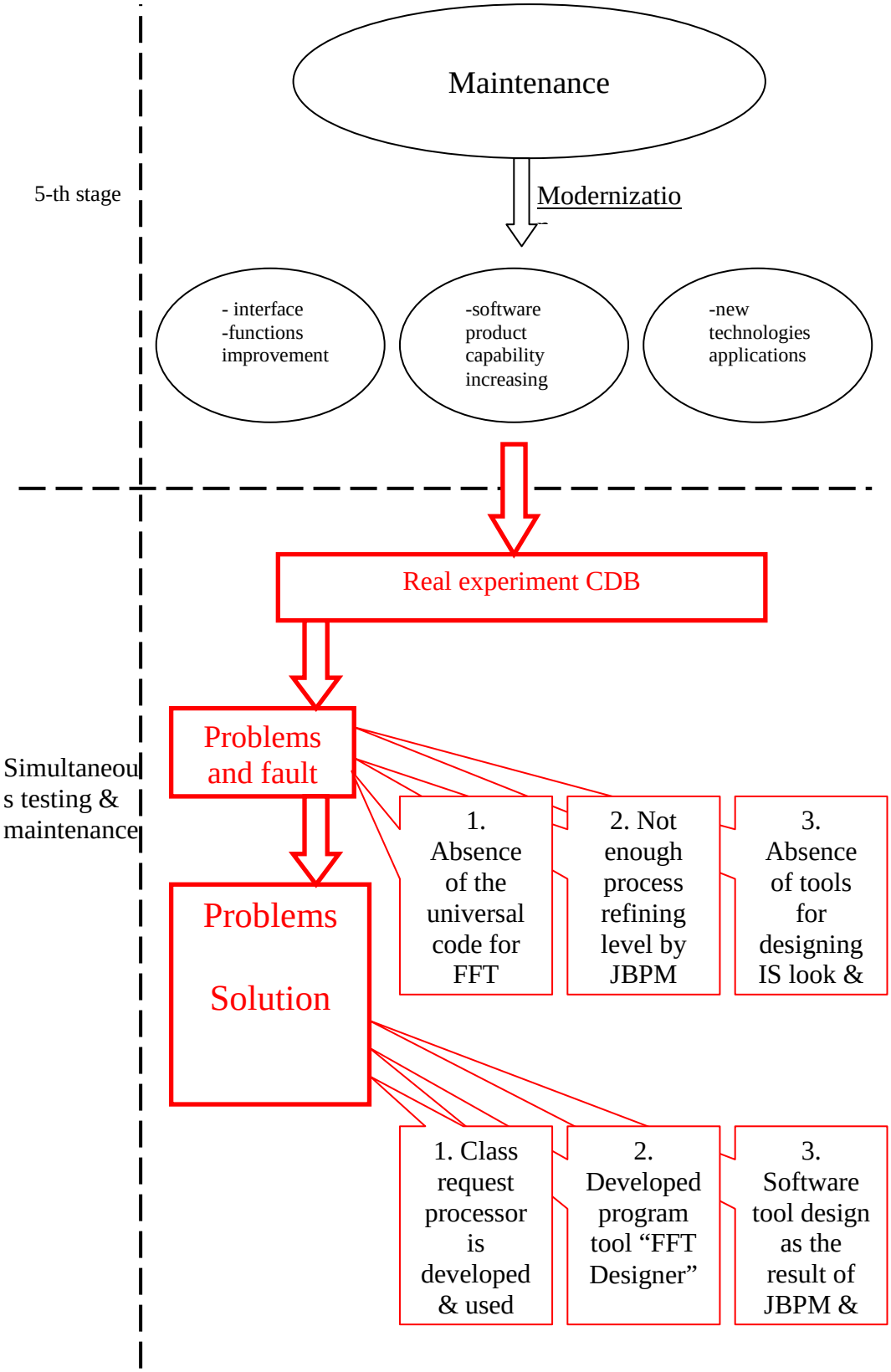

Figure 3. Modified points and problems in standard maintenance while real experiment

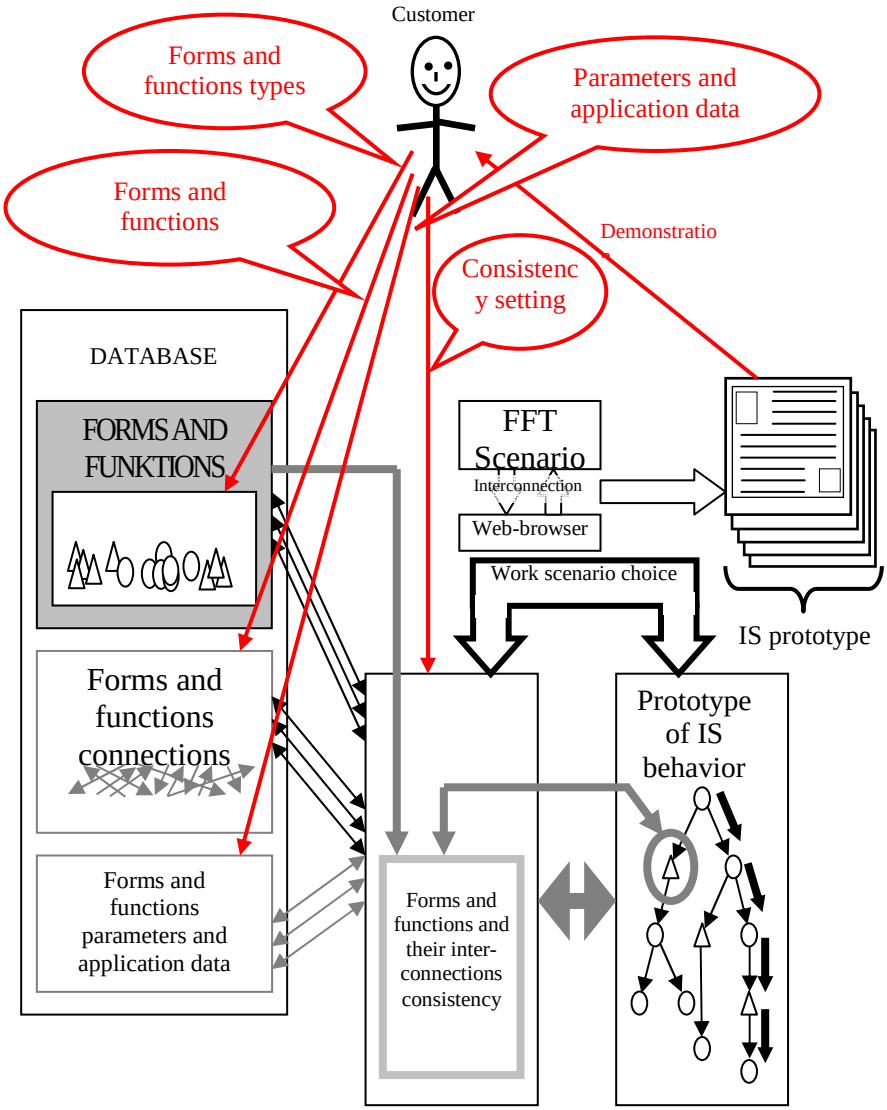

Figure 4. IS prototype development

Conclusions

Taking into account suggestions to IS prototype, testing, database structure, realized by "FFT Designer" and its integration with such CASE-tools as Borland Together or Rational Rose integration by XML application, the suggested integrated environment for information and computation recourses development can be realized.

Modified solution of IS development process steps and its new conceptions (Fig. 1, Fig.2, Fig.3, Fig. 4) give the following advantages:

- IS prototype development for the requirements setting before coding;
- Early interfaces and functionality testing;
- Development stages DB structure provides:
  - convenient data structure representation and modernization;
  - easier error finding and their correction;
  - small-cost reengineering
- 2 outer subschemas of database structure provides:
  - time & place independence of IS development process;
  - project parts portability;

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