Report on the Ninth Conference on Software Engineering and Databases (JISBD 2004)

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1. Introduction

The ninth edition of the Conference on Software Engineering and Databases (named JISBD after its initials in Spanish) was held in Málaga (Spain) November 10-12, 2004. This conference had its origins in two previous, separate events comprising two scientific communities closely related to the subjects of the conferences: on the one hand the Spanish Software Engineering Conference, held for the first time in Sevilla (Spain) in 1996, and, on the other, the Spanish Conference on Research and Education in Databases, held in A Coruña (Spain), also for the first time in the same year. These two events were joined in 1999, giving rise to the Fourth Conference on Software Engineering and Databases, for the first time with this name, which has been preserved to date.

Since those early years, some other important changes have also happened, particularly concerning the scope and audience of the conference. In the beginning, the two events mentioned above involved only Spanish research groups. This was initially extended to include Portuguese research groups, and later to attract the Latin American scientific community. Every year, the Conference brought together the most important research groups from Spain, Portugal, and Latin America working in Software Engineering and Databases related matters, and since 2002 the conference accepts papers written in Spanish, Portuguese or English, thus widening the call for contributions to the whole scientific community.

2. The Ninth Conference on Software Engineering and Databases (JISBD 2004)

In this section, we will summarize the goals and structure of the conference as well as giving some statistics regarding the submissions and main results of the technical sessions of this latest edition.

2.1. Goals and structure

The main goal of the Conference on Software Engineering and Databases is to provide a scientific and professional forum where Spanish, Portuguese and Latin American researchers and practitioners in Software Engineering and Databases can come together and discuss, share and exchange ideas, problems and experiences and results, and thus foster a profitable collaborative debate among the different sectors and research groups in these areas.

The conference was mainly interested in high quality papers within the scope of the two fields mentioned. These were selected through a rigorous process, although space was also available for good contributions from new groups (short paper sessions), papers describing recent or preliminary results (workshops), and for training in either novel topics or topics of broad interest for the Software Engineering and Database communities, for researchers and engineers (tutorials).

The topics for the Technical sessions of this edition (see the JISBD 2004 web site [3]) were structured in six main sessions dedicated to regular scientific and experience papers, and short papers. Section 2.2 of this report discusses this important part of the conference.

Two invited talks completed the scientific program: the keynote speech "*Towards Active Software*" was given by Dr. Ivar Jacobson, formerly main researcher at Rational and currently working at Jaczone AB. Dr. Jacobson's contributions in the Software Engineering realm are well known. Jacobson emphasized his vision of making the software process active rather than passive. Active software acts as an advisor to the user, it adapts the software to the user's experience and preferences. It can learn from the user and it automates clerical activities. Dr. Jacobson's very revealing talk showed how active software today is becoming a reality.

The main speech within the Databases field was "*Enhancing the Web with DB Technology*", by Dr. Timos Sellis, currently a Full Professor at the National Technical University of Athens (NTUA), in Greece. Timos highlighted that recent advances related to the Semantic Web as well as the explosion of applications requiring

dynamic data extracted from databases both call for several new extensions. In his talk, Timos presented novel models and techniques for managing Web data and discussed why a new kind of proxy that satisfies requests concerning dynamic web objects is needed. He also considered issues of proxies topology, query rewriting, etc.

Another plenary activity was a panel, devoted to presenting and discussing the main Information and Computing Technologies research funding programs within Spain and the European Union.

Finally, the workshops mentioned below completed the program of the conference. The workshops gave authors and participants an opportunity to present and discuss ideas that are topical and innovative in the Software Engineering and Databases areas in an atmosphere that fostered interaction, exchange and problem solving. Hot topics constituted the titles of the workshops approved: MDA, Standardization and Quality, Emerging Solutions for Data Warehousing Systems, Web Services-based Applications, Aspect-Oriented Software Development, Decision Support in Software Engineering, Multi-agent Systems Development and Security in Software Engineering and Databases.

Most of these events were held on the day before the main conference, November 9, 2005.

2.2. Technical Program

Some participation statistics and insights of the technical sessions are provided below.

Submissions, acceptance and participation

121 submissions were received and evaluated. Details of submissions are shown in the pie chart in Figure 1. Each submission was revised by at least three reviewers and finally 38 papers were selected out of the 121 submitted (31,4% acceptance). In addition, 14 papers were chosen for the short paper session.
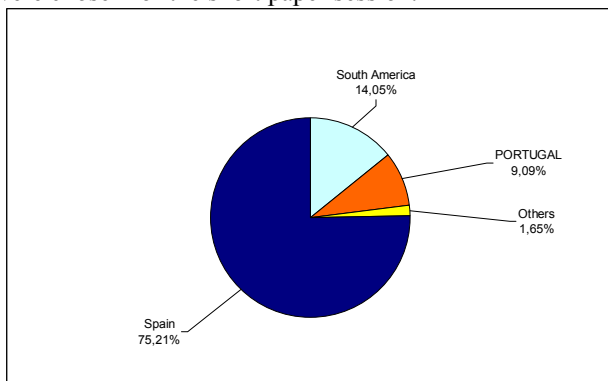

Figure 1. Submissions received at JISBD'2004

Concerning participation, the workshops attracted more than 80 researchers and practitioners, and 140 participants attended the main conference.

Observations on the Technical Program

Although submitted papers covered all the topics mentioned in the CfP, we can point to certain topics that were the focus of most submissions. These observations show us the main fields where the Spanish, Portuguese and Latin America research communities are focusing their work.

In both the Software Engineering and Database areas, the issues that attracted most submissions were: Aspect Oriented Software Development; Quality, measurement and estimation of products and software production processes; Software architectures and Data Modelling; XML and semi-structured data and Semantic Web; and Data mining, Data streaming and Data Warehousing. Below, we summarize some of the most interesting insights on the matters that occupied most space slots: Aspect-Oriented Software Development; Quality, measurement and estimation of products and software production processes and XML and semi-structured data, and Semantic Web.

Aspect-Oriented Software Development.- Undoubtedly, Aspect-Oriented Software Development (AOSD) has recently become a buzzword, gluing together a set of emergent technologies that seek modularizations of software systems. The selected papers that covered this topic of the Conference showed the growing interest of the JISBD community for AOSD technology, emphasizing that aspect-orientation should be taken into account in all the stages of the software lifecycle, from requirements to code level, and applying aspect-oriented reverse engineering techniques later. Besides, aspect orientation techniques are currently being applied in different application domains, such as ambient intelligence, e-commerce, databases and distributed systems and middleware. Hot topics related to this technology, leading to interesting discussions in the technical talks were the integration of aspects in MDA, aspect-oriented software architectures, dynamic weaving, and the use of aspect-orientation on the implementation of design patterns.

Quality, measurement and estimation of products and software production processes.- The contributions presented in this session confirmed the growing interest of the SW and DB communities in requirements, quality and measuring issues. Particular attention was paid to the standards CMM, CMMi, ISO/IEC 15504 (SPICE) and ISO 9001:2000. Problems detected with these standards included the lack of suitable methods for small and middle-sized businesses, the excessive rigidity of some of these approaches and the need to improve the

incorporation and selection of metrics in the organizations. Novel methods and techniques to deal with these problems were proposed and particularized to SMSB as well as to CBD projects, including metrics and independent validation procedures. Applying agile methods in a CMM context, even at Levels 4 and 5 was shown not only as feasible but effective. Regarding DB centric On-Line Transaction Processing (OLTP) systems, a set of general guidelines for the definition and validation of dependability benchmarks was also proposed. Finally, risk management in software projects was also discussed, through a case study, using the SEI-CRM method in a large software project. Most of the results presented in this session combined research and innovation aspects and were backed by experimental, quantitative or qualitative validation.

XML and semi-structured data, and Semantic Web.- Other hot topics dealt with in depth by several conference contributions were XML and semi-structured data, and semantic web. In particular, some sessions were devoted to discussing the possibility of integrating new query languages in web applications, mainly those based on XML documents, and to analysing different systems currently using database technology for knowledge representation on the web. Other interesting conclusions were established as a consequence of some of the proposals presented during the conference, like compression techniques for well structured documents, interoperability of web applications through a specific architecture based on extending mediators with XML, etc.

All the contributions appear in the JISBD 2004 Proceedings [1] and a selection of the best papers has been published in a special issue of IEEE Latin America Transactions [2].

3. Conclusions

This ninth edition has revealed yet again that this is a consolidated and growing event that yearly attracts more researchers and professionals from countries beyond those originally present.

As for the division of the two fields, Software Engineering and Databases, the experience shows that the boundary between these two scientific fields is not always clear. In some cases the same problems are often dealt with using techniques coming from either SE or DB. In others, the same techniques are applied to solve problems related to any of these fields. The decision to join the two original events in 1999, as mentioned in the introduction, has proved, with the passage of time and particularly in this latest edition, to have had a positive effect that has reinforced both of these scientific communities as well as the links between them.

JISBD'2004 also demonstrated the popularity reached by workshops, where participation was very high.

4. Next step: the Tenth Conference on Software Engineering and Databases (JISBD 2005)

The Tenth edition of the Conference on Software Engineering and Databases will be held in Granada (Spain) next September 14-16, 2005. The goals, topics, structure and audience will be similar to those described above for JISBD 2004, but for this new edition the conference will be integrated for the first time within the I Federated Spanish Conference on Informatics, CEDI 2005. Proposals are sought for both commercial and in-house applications, tools and systems, as well as academic and corporate research.

5. References and Web sites

[1] Hernández, J.; Pimentel, E. Proceedings of the Software Engineering and Databases (JISBD 2004), (contributions in Spanish and English)

[2] IEEE LatinAmerica Transactions electronic journal, JISBD 2004 special edition, March 2005, vol. 3, issue 1. http://www.ewh.ieee.org/reg/9/etrans/Marzo2005/March05.htm

[3] JISBD 2004 (Ninth edition): http://jisbd2004.lcc.uma.es/

[4] JISBD 2005 (Tenth edition): http://cedi2005.ugr.es/isydb

[5] CEDI 2005 (multi-conference where JISBD 2005 is integrated): http://cedi2005.ugr.es/ (currently, the main pages of this web are in Spanish; some of the conferences included, - accessible through the "Symposia List" option- also provide the information in English and other languages. JISBD 2005 Call for Papers in English, Spanish and Portuguese.