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Journal of Current Development in Artificial Intelligence

Aims and Scope

Journal of Current Development in Artificial Intelligence is a Journal addresses concerns in applied research and applications of artificial intelligence (AI). the journal also acts as a medium for exchanging ideas and thoughts about impacts of AI research. Articles highlight advances in uses of AI systems for solving tasks in management, industry, engineering, administration, and education evaluations of existing AI systems and tools, emphasizing comparative studies and user experiences and the economic, social, and cultural impacts of AI. Papers on key applications, highlighting methods, time schedules, person months needed, and other relevant material are welcome.

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Contents

The Role of New Technologies (E-Book Bag) in Learning Several Basic Region Vardashat

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A B S T R A C T

This paper aims to improve the quality of learning in schools ,explaining the new millennium with new technologies(e-book bag) to review the analytical method has been developed. The arrival of the man and went into the third millennium technology, it is possible to provide the twenty-first century the "knowledge age" call. The findings of this study showed that the use of information technology in today's world has led to major changes in education, including: the creation of interactive and lively learning environment, learning more enjoyable, interactions between students and teachers facilitate learning, creativity and learning independent learning and culture. In the new millennium, the knowledge of the fundamental pillars of development known as the human dependence on technology is more than ever before, The results of this study showed that technology is a tool in order to facilitate the process of learning, Active learning development, creating new fields of social and information for learning, bringing students to a rapid and meaningful learning(learning TEAL) and one of the aims of improving the quality of the new era of e-learning in schools is. It is essential, teachers in the electronic age, the training step to learning, educational use of new technologies and platforms to achieve the goals of higher education can provide.

Key words: quality improvement of learning, students, new technologies, technological active learning.

INTRODUCTION

Twenty-first century, is wisdom century, the century of industrial society to an information society, where the information, knowledge, the most basic human assets, people and communities are considered. With the development of information technology and shorter economic cycles, intangible assets, particularly knowledge, to highlight its role, creating value added, the resulting data is a strategic asset of the main indicators of specificity among communities (Attaran, 1381, p.35). Advanced technologies, especially information and communication technology has quickly swept the world and on many aspects of life, including education has a significant impact, So they went ahead and advance the education system without the use of technology can not be traced. What is certain in the world of the twenty-first century world of modern technology and world domination in terms of change and diversity peremptory snap on scientific, economic, cultural and political. Therefore the need to use

information and communication technologies in schools through computer systems to achieve the operational objectives of the Ministry of Education and increase efficiency. And effectiveness of information, reduce costs, save time and more interaction with the outside world, today more than ever felt in the information society (Shams et al., 1392, p. 315).

Educational technology in the teaching process always have a special place, and today it is clear the necessity of taking advantage of it. The use of new technologies in learning and teaching will be learning effectiveness. The explosion of information through technology (technology) new electronics such as computers, Internet, video and new technologies has changed the nature of knowledge.

Twenty-first century is called the age of modern humans through various communication channels of information are organized, and in particular the advent of the Internet to access this helps. The emergence of fantastic innovations in the field of educational technology, have transformed the nature of education. The new approach of teaching-learning, technology plays an essential role. The evolution of training, students will be able to think, solve problems, to work with others and to achieve creative solutions, Search (for Rubaie, 1390, p. 34).

Experts conclude that the future of teaching and learning will be based on the technology and electronic spaces. The group of computer-based learning to the learner interaction with the virtual environment, and freedom of manipulation in the traditional classroom environment in which students are often passive and merely watched the prefer . The result is that when the professional skills of teachers in the field of educational technology, specialized knowledge of pedagogy and philosophy of education, the proportion of each country should be added to the curriculum. Actual position themselves as expert teacher education and educational technology will meet. And technology based on the goals and objectives of the training and its effectiveness in the teaching - learning process will be used in instructional design. In other words, technology is so effective in-service education and training will be provided.

RESEARCH METHODOLOGY

To prepare this initial stage is also referred to various libraries and scientific study of domestic and foreign books the impact of new technologies in teaching and learning process and extract the results of the present study is the next step is to summarize the contents and formulate conclusions and proposals should be submitted on the basis of information obtained. Science and Technology category of the most advanced infrastructure and tools to compete in the various serious.

The use of information and communication technology, media and tools to determine to facilitate learning and empowerment deals (Haji Babai, 1391, p. 66). Potter (2000), states that the use of ICT on students' prior academic self-efficacy and the positive effect and allows the students to learn the skills to better use. The results showed that, among the benefits of ICT, personal training, improving the quality of teaching, dealing with the problems of mass education, equal educational opportunities, the practical implementation of implicit learning, online education, the loss of time constraints in education and teaching to share educational resources, control and supervision of students in training, research areas centered on a group of students, attention, motivation of learners in learning, foster creativity and innovation in learning (Asefi, Amlashi, 1388, p 65). When teachers use new technologies in their classroom, students learn to be associated with self- confidence and motivation to learn more. Other benefits of new technologies in education include: lack of time and space limitations, not being limited capacity, taking into account individual talents, flexibility in the modification of content, promote independent learning, the use of qualified teachers in the broadest and speed train (Kavoussi, 1388, p. 59). Studies show that, when teachers are using new technologies in their teaching, efficient and effective learning for students and academic performance and educational function increases. Future information society needs people who are able to develop innovative information technology in their work (Mashayekh, 1379, p. 44). Therefore should hold workshops and in- service training for teachers, new technologies and participation in programs designed and their views on planning, culture, embracing training in the use of new technologies in the teaching provided. Because when the professional skills of teachers in the field of educational technology, specialized knowledge of pedagogy and philosophy of education, the proportion of each country should be added to the curriculum, the teacher's actual position itself as an educational technology, expert education and will meet the goals and objectives of technology on teaching and learning process in terms of its effectiveness in the use of instructional design. In other words, technology is so effective in-service education and training will be provided. Experts believe that despite the many benefits that the technology is there, if teachers use in the classroom to have a positive attitude, certainly the development of IT faced with the problem. The use of technology in teaching, quality of teaching, quality of communication in the classroom, the students' participation in class-based technology, the quality of the relationship between teacher and student, enhanced interaction between teacher and student.

Based on the findings of this research is to understand the patterns of teaching based on new technologies as a new way of teaching has a significant impact on pupils' learning and achievement motivation. Hence, in the first decade of the new millennium and the era of information and communication technologies are. Based on the findings of this research is to understand the patterns of

teaching based on new technologies as a new way of teaching, learning and motivation on student achievement has dramatic effects. Hence, in the first decade of the new millennium and the era of information and communications technology, we need to know Including the participation of teachers and learners and teachers in the use of new technologies to increase their knowledge (due to the rapid changes in technology) on the day although these technologies have the potential to influence a wide range of educational systems have the capacity to reflect on the And appropriate to the circumstances and priorities of those used. Undoubtedly necessary for the proper utilization of new teaching methods in the information age, there are teachers who have the information literacy. Clark (1985) suggests that different media have different educational training in the delivery of content and message are essential elements in learning effective use of educational strategies, is not Technology (eskandari, 1391 pp 48). So this is the kind of teacher that takes advantage of its strategies can be created on the effectiveness of the technology (Kanvka, 2008).

Thus a significant role in the development of information technology and the promotion of knowledge learners will. And its importance is so clear that it can, not be ignored, because they improve the quality of education provided The use of new technologies in the teaching learning process, because the attraction that brings students, Can enhance the learning and development of meaningful learning among students (despite individual differences) is. Clerk (2001) argues that successful learning requires the learner to interact with the content or instructional materials. Real engagement, enable the learner's mind. Lynch (2002) argues, the interaction in the electronic environment, easy to do activities such as clicking and moving between pages is not limited to, But real interaction requires a high level of employment learner thinking skills, such as composition, application, and interpretation. Spiro argues, the best tools for effective learning, interactive technical tools. Razavi (1390) states, directing or guiding the learner, one of the key elements in the design of computer-based learning environments and learning proper guidance, can lead to increased engagement in the curriculum. The main changes resulting from information and communication technology, has been a source of major changes in the classroom. "The recent move forward in technology, the entry and emergence of information networks, especially the Internet, multimedia, communication technology, new tools and methods for the designers, planners, managers and executives training programs has "(PAS, 2008). So one of the best ways to create favorable conditions involved in the education system and enable students to learn to use new technologies as teaching tools .

Which is also confirmed by many scholars. ICT has the potential to support learning through the curriculum, Provides opportunities for effective communication between teacher and student and teaching practices, change and innovation to create. Bruner (1997), believes in information and

communication technologies in schools, the students are learning more and better leads. Lance believes that computers in the development of high-level thinking skills, such as determining the issues, identify information, solve problems and plan appropriate results, were effective.

DISCUSSION AND CONCLUSION

Information and communication technologies, a world in which we live, teaching methods and approaches have influenced how to live. The clever use of new technologies in teaching and learning in teacher education that will allow the opening of new knowledge into your classroom and your students in meaningful learning and provide stability. What is certain is that today's information and communications technology as a powerful tool to improve the quality and efficiency of the learning and teaching of students in schools in the new millennium will be used And has led to a new form of interactive learning environment and develop creative and active and has led to a new form of interactive learning environment and develop creative and active.

The results showed that with the use of intellectual technologies in the learning process, boundaries and limitations are reduced. Improve the quality of teaching and learning and e-learning, enhancing educational enclosed space students are trained in collaborative knowledge production and the role of teacher knowledge carriers, the creator of the learning environment is changing. Students, the material becomes more deeply understood and enjoyable learning. Results Najafi (1385) showed that the use of computers to the development of incentive learning impact (Najafi, 1385, p. 48) and the speed of learning has increased the role of the teacher, the one source for scholarly literature, a "manager supervisor the learning process "will change. The findings of this study showed that the use of technology to facilitate teaching and learning process and increase the student's knowledge.

Hyrosatv research and Tiny (2001) showed that the technology can learning resources for teachers to be flexible. Jafr et al (2007) concluded that the technology provides learning experiences is valid. Ogdan (1999) argued that educational technology can provide the opportunity to the students to learn their exact. In one study, the use of IT tools in teaching more students than the traditional approach to learning leads (distance and Belcher, 2005). Technology development in the educational system, not just an option, but a necessary and inevitable step in reforming the educational system is the (Kelly, 2002). Or environmental conditions that every moment of it, many changes occur. Conditions due to the multiplicity of heavy traffic and satellite television networks and media tools, Message types are constantly being transferred to a saturation of the media and their audiences have been bombarded with information. Industry IT, the third millennium AD faced with such profound transformations that can be used as the "digital revolution" named. Students with a clear goal to select and store their data and

collaborate with other students and teachers, information, write, edit them. To train individuals to be able to classify information, processing and forecast, the teacher should review their role and the role of 'speaker »it« FAQ learners »modify, to Syntax when In new information technology, training, and equipment necessary to be in possession of it (Cheragh Boyer, 1389, p. 34). In today's world of information technology has led to major changes in the teaching and learning. First, it provided a lot of information, learners' perception of the world transforms, second, that the wide distribution and easy access to information, the relationship between students and teachers has changed. Third, flexibility, space and time dimensions, transforms the life of human learning. All these changes are evidence. That ICT is an essential element for education reform and innovation has gradually become a modern society and our educational system closer to the era of e-learning (Unesco, 2002). Research results and research Kpan and Andrei (2000) also shows that information and communication technologies have the potential to work practices and flexibility to provide professional development schools. So far, many studies on the use of new technologies in the teaching-learning process is done. One of these studies by Fylsl and Barnes (2002), learning new ways to learn about the transformation of Australia is based on technology that aim to evaluate learning outcomes in the use of technology in the teaching process was learning. Results Deacon et al (2005) also show that educational technology to facilitate teaching and learning in the classroom is important for learners to provide appropriate learning conditions.

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Comparison of the Semantic Annotation Systems for the Text-Based Web Documents

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ABSTRACT

In recent years, internet has become one of the most important sources of information. Due to the amount of deviation of available information, searching for web content via keywords is inefficient. To some extent this is because unconstructed HTML web pages has been created for human understanding and cannot be processed directly by machine. The aim of semantic web in line with automatizing of duties and processes is improving the structural condition of web from the readable level for machine to understandable level for it. For achieving this prospect, some metadata should be added to existing data in web. These metadata include an explanation about content or function of sources. One of the main guidelines for linking such metadata is annotation.

1- INTRODUCTION

Semantic web promises of some functions such as concept searching, custom web page generation and question answering systems. Partial semantic annotation is a key for actualizing semantic web. Available content and existing documents on web cause difficulty for manual annotation. Semi-automatic semantic annotation systems have been called platform due to extensibility and comparability of services. These systems have been designed for reduction of workload of text-based web documents. Semantic annotation platforms offer services for supporting annotation such as ontology, access and storage of knowledge base, information extraction, programming interfaces and final user interfaces [1].

2- COMPARISON OF SEMANTIC ANNOTATION PLATFORMS

This section presents an overview of semantic annotation platforms according to platform properties. Then according what was mentioned, a framework for presentation of differences between platforms has been defined. An outline of some representative platforms will be offered and each platform will be briefly analyzed by using framework of platform description.

2-1- Development of semantic annotation platforms

The semi-automatic annotation systems which were compared in this section present semantic annotation of text-based web documents. Such systems are largely called platform for their extensibility and computability. In addition, in some research they will be referred as platform.

2-2- Platform architecture

Figure 1 shows a general architecture of semantic annotation platforms (SAP) as a constructible system [1]. Often, SAPs are extensible. This means that their different components can be replaced by other implementations. The advantage of extendible annotation platform is that it can be adjusted with many requirements like changing of domain and language or creating scaling.

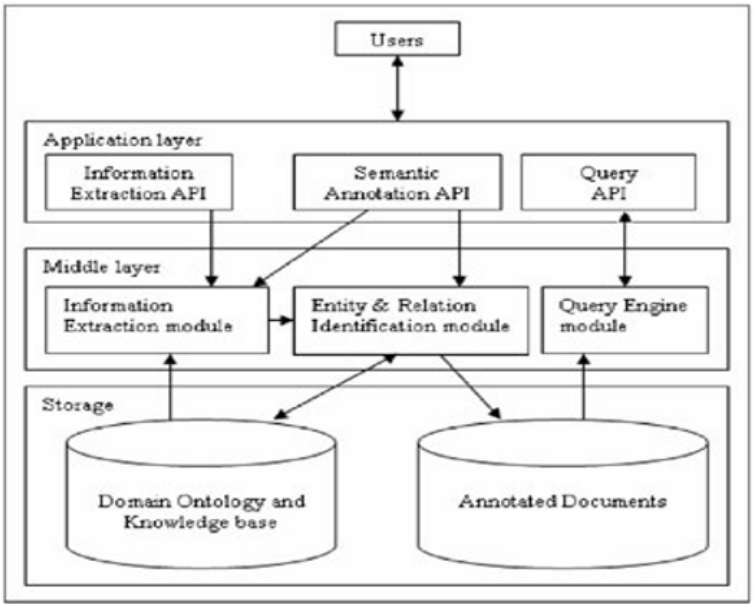

Figure 1: general architecture of a semantic annotation platform

Application layer is responsible for creating a final interface user for prepared services by SAP. The samples include facilities for annotating a document or collection of document and finally acknowledging annotations before their stabilizations. This architecture creates an investigating interface for finding annotations and an interface user for forming information extraction section. Application layer is a layer for interfaces of primary application program. A collection of general programming interface has been designed, and covers the application of middle layer defined in this layer. Due to actions of platform of an application, they are called defined API which can be multiple. Middle layer includes an original part which can perform an action for an application like information extraction for concept identification (names and relations). But middle layer has been created and/or adopted for an existing tool. Storage layer has been used for making storage and management of storage facilities for long-term saving of data such as ontologies, annotations of documents and knowledge base.

2-3- Platform categorization

Recent annotation platforms use various methods of information extraction from web documents. Figure 2 shows a hierarchy categorization of annotation platforms on the basis of their IE component [1]. This categorization schema can be used for organizing complier platforms of semantic annotation.

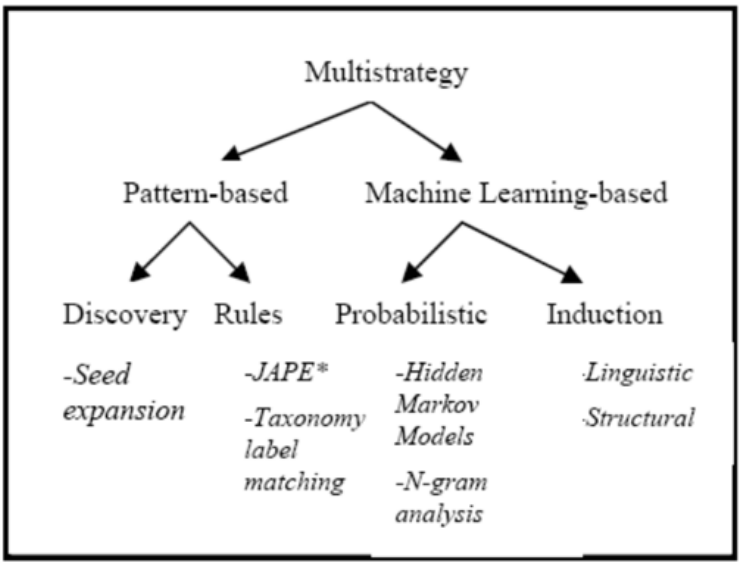

Figure 2: A categorization of semantic annotation platforms on the basis of used information extraction method

During past years, many tools and systems have been designed for semantic annotation. These tools and systems, called as annotation platforms, are categorized on the basis of used annotation method in them. For this, platforms are divided into two major groups: pattern-based and machine learning-based. These two groups illustrated in Figure 2 [1].

Platforms can use existing methods in both groups. This is for strengthening and compensation of reduction of existing methods in each group which is called multi-strategy. Pattern-based methods can perform discovery of pattern and also use patterns which have been defined manually. Machine learning-based techniques use probabilistic and induction approaches. Platforms with probabilistic approach use statistical models for predicting the existing place within the text.

2-4- Pattern-based methods

Patterns have been extensively used in semantic annotation platforms. Activities of pattern discovery find some pattern-based existence by reception of several examples. Receiving examples are extended by some patterns from new found existence. This process will be repeated till no more sample found or user stops repeated process. In order to find existences within the text, recognized language pattern can be used, like Hearst patterns [1].

3- AN OUTLINE OF SEMANTIC ANNOTATION PLATFORMS

In this section, some of semantic annotation platforms have been surveyed [1]:

- ✓ AeroDAML: [2] is designed for mapping proper nouns and common relations, DARPA (DAML) agent marking for categories and corresponding properties in language ontology.

- ✓ Armadillo [3] has been used for searching home pages of computer teachers in order to find information of private calls, like name, place, home page and email.
- ✓ Kim [4] is a place for managing knowledge and information. This tool contains ontology, knowledge base, semantic annotation, indexing server and recovery besides final software for interface server.
- ✓ MnM [5] offers a platform for manual annotation of didactic writing. They are given to an induction cover system on the basis of Amyl care [6]. Once platform is taught and rules are inducted from didactic writings.
- ✓ MUSE [7] applies an applicable rule-based approach for annotating. Text properties are used for conditional performing of various processing sources like different cultures on a document.
- ✓ SemTag [8] includes Seeker semantic annotation as a general platform for web pages' annotation at large scale. SemTag is used as specific tool of semantic annotation independent of domain. This tool annotates 264 million web pages and produces 434 million semantic annotations which have been automatically cleared.

4- CONCLUSION

In order to achieve semantic web, semantic annotations should be used extensively. The advantage of adding meaning to web includes query process by concept searching, custom web page generation in impaired vision, and using information with different concepts, development of needs and user viewpoint and answering query. Manual annotation is difficult for some reasons. Manual annotation is not scalable for document volume on web and suffered from some matters like motivation and knowledge of annotator domain.

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Error Behaviour in High Speed Channel Links

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ABSTRACT

Channel coding is a standard method of improving a system's energy efficiency in digital communications; its practice does not extend to high-speed links. Increasing demands in network speeds are placing a large burden on the energy efficiency of high-speed links and render the benefit of channel coding for these systems a timely subject. The low error rates of interest and the presence of residual inter symbol interference (ISI) caused by hardware constraints impede the analysis and simulation of coded high-speed links. This framework provides a deeper insight into joint error behaviors in high-speed links, extends the range of statistical simulation for coded high-speed links. Finally, based on the performance of standard binary forward error correction and error detection schemes is evaluated, from which recommendations on coding for high-speed links are derived. The work presented serves as the foundation for future investigations in the use of ECC in these systems. Scaling of integrated circuit technology has continually increased the data processing capabilities of integrated circuits in these systems. The work described in these is shows that it may be possible to use coding techniques to share the burden of combating errors, while increasing the throughput of the link or improving its energy-efficiency. An experimental setup was created for characterization of link channel properties and performance gains from different codes. Four codes, specifically Hamming, BCH, Fire, and SEC-DED codes, are implemented and analyzed with various configurations (i.e. different block sizes, data rates, and detection or correction). Most significantly, it is discovered that detection and retransmission of even the simple codes implemented in this project.

Keywords: Communication systems, integrated circuit inter-connections, intersymbol interference (ISI).

1. INTRODUCTION

Practice of constraining the data stream in order to mitigate the effects of the communication channel on the received signal, commonly referred to as channel coding, is a fundamental technique in digital communications that is responsible for some of the most dramatic improvements in the modern communication standards. while channel coding is employed in most of today's communication systems, both wireless and wire line, in order to improve on the speed/reliability/energy efficiency of the system, the technique remains unexploited in a ubiquitous class of communication systems, namely the high-speed backplane and chip-to-chip interconnects. The increasing network speeds place a large burden on high-speed links, which fail to keep up with the scaling trends. The underlying problem is the

bandwidth-limited nature of the backplane communication channel, exacerbated by severe complexity and power constraints. Despite several recent efforts the topic of channel coding for high-speed links remains largely unexplored due to a lack of suitable analysis and simulation frameworks. The residual inter-symbol interference (ISI), coupled with noise and other circuit impairments, significantly obscures the performance picture and renders both the theoretical and computational approaches more arduous. The problem of estimating the performance of a coded high-speed link is further exacerbated by the low error rates of interest. We apply the analysis and techniques used in communication system design to the unique problems posed by the high-speed, channel- limited link design. By analyse the specific properties of the high-speed link system. There is a constant struggle to keep up with the increasing demands in various applications requiring high-speed chip-to-chip interconnects, such as network routers and processor- memory interfaces. To increase data rates while maintaining reliability, new advances must be made in the techniques used for data transmissions. Modeling the high-speed link as a system with additive white noise and ISI, as makes it possible to describe the error correlation in terms of two fundamental quantities: the systems error region and the channel's sign signature. The error region corresponds to the set of values in the ISI distribution that are responsible for the majority of errors. While the error region is determined by the combined noise and the magnitude of the coefficients forming the channel's pulse response, the channel signature is specified by the signs of those coefficients. The analysis shows how these quantities conceptually decouple the complex problem of accounting for the effect of a real-valued channel on error behaviour and provide a missing insight into error correlation in a high-speed link. While current statistical simulation techniques for high-speed links ignore error correlation between symbols, shows that a direct extension of the independent-errors approximation improves the estimate's accuracy by up to five orders of magnitude for the error rates of interest. The approach exploits the physical properties of high-speed links, particularly the nature of the ISI, which limits the range of the error correlation. It relies on accurately capturing the short-term error correlation within no overlapping blocks of symbols and assumes independence. This model has proved helpful for modeling and analysing behaviours of communications circuits. However, as data rates increase, the effects of noise need to be taken into account.

2. REVIEW OF SYSTEM MODEL

A simplified model of a high-speed link is shown in Figure 1. The bit stream, which can be coded or uncoded (unconstrained), is modulated to produce the equivalent symbol stream and transmitted over a communication channel. The system employs PAM2 modulation with detection performed on a symbol-by-symbol basis with the decision threshold at the origin. The transmitter and receiver may contain equalizers, in which case the channel's impulse response may contain residual ISI. The two

main mechanisms that account for the most significant portion of the residual ISI in high-speed links are dispersion and reflection. In addition, residual interference may also include co-channel interference, caused, for instance, by electro-magnetic coupling. As accounting for co-channel interference involves the same set of mathematical tools as accounting for the ISI, the remainder of the paper focuses on the effects of the ISI. The quantity of interest is the received signal at the input to the decision circuit at time, denoted and expressed as

$$Y_i = Z_i + N_i \quad (1)$$

Where denotes the received signal in the absence of noise and is the noise term. Specifically, denoting the channel's pulse response by, where represents the length of the pulse response and is associated with the principal signal component, and letting denote a sequence of transmitted symbols, then

$$Z_i = \sum_{j=-k}^{m} X_{i-j} h_j \quad (2)$$

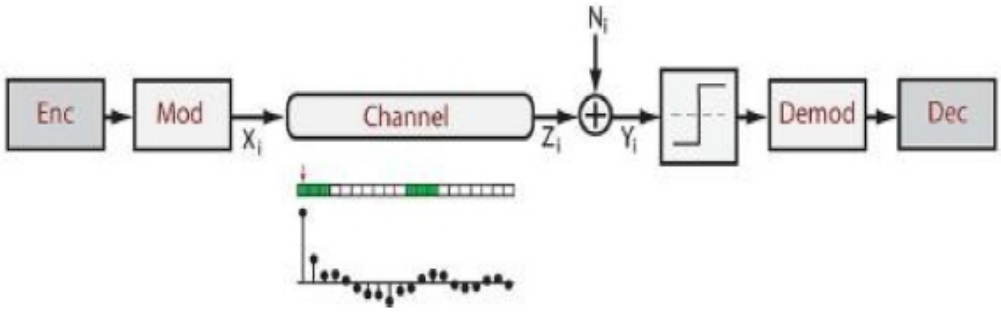

Figure 1: Simplified model of a high-speed link. Transmit / receive equalization is reflected on the symbol-spaced pulse response.

3. ERROR BEHAVIOR IN SYSTEMS WITH NOISE AND ISI

In the system of Figure 2 an error at the receiver occurs if the noise and ISI couple to bring the received signal over the decision threshold. It follows that the marginal symbol error probability for the symbol is given by

$$p_i = P(\{Y_i < 0 \mid X_i = 1\} \cup \{Y_i > 0 \mid X_i = -1\}) \quad (3)$$

Assuming an unconstrained symbol stream, the marginal symbol error probabilities are equal that is for all symbols. The quantity, which becomes the relevant figure of merit, is entirely determined by two factors, namely the channel pulse response, and the probability distribution of the noise. Efficient methods of computing the marginal error probability are described in among others. In a coded system with ISI, this picture changes in two important ways. Due to constraints on the symbol stream, the marginal error probabilities are no longer equal across different symbols. An efficient method of computing for different symbol locations in a codeword is described in which focuses on systematic binary linear block codes. However, the performance of a coded system cannot be expressed through

marginal error statistics alone, but is instead dependent on the joint error behaviour. For instance, the performance of a -error correcting linear block code is typically expressed through the word error rate (WER), given by the probability of observing at least errors in a codeword. The following development shows that the complex relation between the ISI and the joint error behaviour can be greatly elucidated by decoupling the effects of the magnitude and the signs of the channel's pulse response. Understanding the effect of system's error region and channel's sign signature on error correlation lends a deeper insight into the behaviour of codes and the shortcomings of common simulation techniques in high-speed links. Further, an analysis of correlation distance in high-speed links paves the way for a more reliable simulation approach.

Error Correlation in High-Speed Links

In practical channels, the direct link between the channel signature, error region and joint error behaviour holds only asymptotically. For instance, in the worst-case-dominant conditions, the problem reduces to the nesting properties of, while in the limit of large noise, the effect of any channel correlation vanishes as errors become independent. However, both the channel signature and the error region play an important role in determining the joint error statistics. An illustration of the effect of channel signature on error correlation in a realistic high-speed link is shown in Figs. The communication channel of Figure 2 is a standard 802.3ap B32 channel operating at 10 Gb/s. Single tap decision- feedback and three-tap zero forcing equalizers are used, yielding an error rate of. The channels of Figure 2 are obtained by altering the signature of the original channel, which preserves the marginal error behaviour, but alters the joint error statistics. Margining by 36 mV widens the error region, thus increasing the error rate to and rendering the higher- order error events observable through Monte Carlo simulation. The resulting joint error statistics are shown in for a block of ten consecutive symbols.

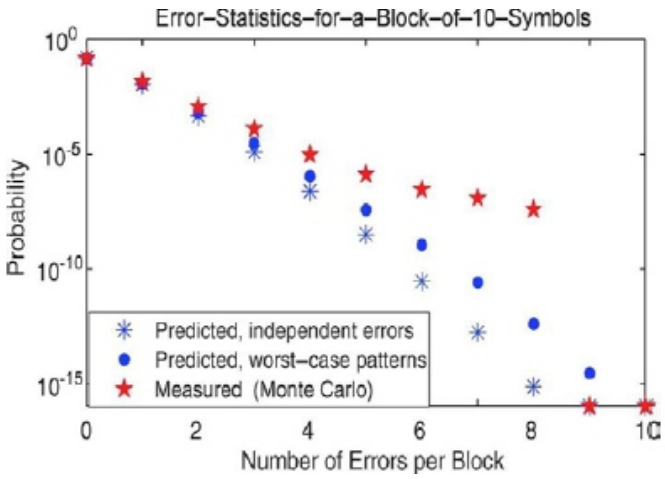

Figure 2: Error statistics for channel

In particular, it is interesting to consider the benefit of focusing on the largest interference coefficients so that the error hinges on the occurrence of the resulting worst-case ISI. The relevant error region becomes associated with the worst-case ISI computed relative to the largest interference coefficients, and includes any amount of deviation caused by the remainder of the channel's pulse response. Identifying the worst-case-dominant conditions in a high-speed link is primarily useful from the standpoint of pattern elimination, that is, the use of code constraints to prohibit error-causing symbol patterns in a high speed link. This idea is further explored. The worst-case dominant conditions are, however, of limited use in improving the performance estimation of high-speed links. In particular, while accurately accounting for the effect of the worst-case ISI on joint error behaviour is computationally tractable, the error correlation due to secondary. Unlike the maximally- correlated channel (Channel B), the original channel (Channel A) does not nest in the sense described in the previous section, neither considering the worst case patterns formed by the entire channel pulse response, nor those formed by the dominant interference coefficients only. However, both channels show a significant increase in the frequency of the higher-order error events compared to the independent- errors assumption. This behaviour is analogous to the example of Figure 2 and is due to the size of the error region, which is made sufficiently large to generate Monte Carlo estimates. Due to the limitations of the Monte Carlo method, it is difficult to infer the degree and type of error correlation associated with the randomly generated signature (Channel C). The presence of a handful of strong interference coefficients in the previous example is due to the dispersive nature of the high-speed link channel and the presence of signal reflections. In general, the pulse response of a typical high-speed link can contain several clusters of strong interference coefficients, separated by coefficients of significantly weaker magnitudes. This suggests that a viable method of deriving intuition about the error behaviour from the channel pulse response consists of considering the error correlation caused by these dominant interference coefficients separately.

4. MODULE EXPLANATION

Module 1

Designing the system model, in that we are simulating the channel impulse model, along with corresponding inter symbol interference distribution A simplified model of a high- speed link is shown in paper here, the bit stream, which can be coded or uncoded (unconstrained), is modulated to produce the equivalent symbol stream and transmitted over a communication channel. The system employs PAM2 modulation with detection performed on a symbol-by-symbol basis with the decision threshold at the origin. The transmitter and receiver may contain equalizers, in which case the channel's impulse response may contain residual ISI. The two main mechanisms that account for the most significant

portion of the residual ISI in high-speed links are dispersion and reflection. In addition, residual interference may also include co-channel interference, caused, for instance, by electro-magnetic coupling (crosstalk). As accounting for co-channel interference involves the same set of mathematical tools as accounting for the ISI, the remainder of the paper focuses on the effects of the ISI. The quantity of interest is the received signal at the input to the decision circuit at time, denoted and Y_i expressed as

$$Y_i = Z_i + N_i$$

$Z_i \rightarrow$ denotes the received signal in the absence of noise

$N_i \rightarrow$ denotes the noise term

In a coded system with ISI, this picture changes in two important ways. Due to constraints on the symbol stream, the marginal error probabilities are no longer equal across different symbols. An efficient method of computing for different symbol locations in a codeword is described in, which focuses on systematic binary linear block codes. However, the performance of a coded system cannot be expressed through marginal error statistics alone, but is instead dependent on the joint error behaviour. For instance, the performance of a - error correcting linear block code is typically expressed through the word error rate (WER), given by the probability of observing at least(t+1) errors in a codeword. The following development shows that the complex relation between the ISI and the joint error behaviour can be greatly elucidated y decoupling the effects of the magnitude and the signs f the channel's pulse response. Understanding the effect of system's error region and channel's sign signature on error correlation ends a deeper insight into the behaviour of codes and the shortcomings of common simulation techniques in high-speed links. Further, an analysis of correlation distance in high-speed inks paves the way for a more reliable simulation approach

Module 2

Generating equalized pulse response for various channels named as Channel A, channel B. To illustrate the effect of extending the error region beyond the worst-case ISI, consider the equal-magnitude, all-positive channel. The corresponding worst-case sequence, given by p=1 1 1 1 1 1 cannot be nested, implying that it is impossible for two symbols to both be affected by the worst-case ISI unless separated by at least l-1 symbols Suppose that for some sufficiently large , , where happens to be such that only the worst-case ISI causes significant error, as illustrated. Compared to the assumptions that the ISI affects distinct symbols independently, the higher-order error events become significantly less likely. Consider next the case where the system parameters (e.g. noise, threshold margin) are changed so that, where as shown in above figure. By allowing the error-prone sequences to deviate from by one symbol, it becomes possible to nest two error-prone sequences.

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5. STATISTICAL SIMULATION FOR CODED HIGH-SPEED LINKS

For an arbitrary system with ISI, fully specifying the joint error probabilities for all symbols in a codeword is computationally intractable due to the size of the resulting state space. The same holds even if the code constraints on the symbol stream are ignored and the codeword is replaced by a block of consecutive, independently transmitted symbols. For this reason, it is common practice to account for the ISI only through marginal error statistics while discounting its effect on error correlation.

However, considering error events on distinct symbols to be independent frequently yields large inaccuracies in the performance estimate, as demonstrated in the previous sections. Rather than ignoring the error correlation altogether, accounting for short-term correlation within a codeword is both computationally tractable and yields superior performance estimates. A simple statistical method of estimating the effect of short term error correlation is described below. The method also provides direct means of trading off computational requirements for accuracy and enables computationally tractable code- space explorations. A set of numerical examples illustrates the proposed simulation approach and completes the previous discussion of the effect of error region and channel signature on error correlation. The results point to the inadequacy of biased Monte Carlo techniques in accurate high-speed link simulation. In particular, it is shown that the joint error behaviour of a specific high-speed link channel at high error rates need not be indicative of its behaviour at low error rates. Thus, without an adequate method of "unbiasing" the performance estimate, biased Monte Carlo techniques should not be used for the accurate simulation of coded high-speed links.

Proposed Simulation Method

Based on the physical properties of high-speed links, the previous section develops the motivation for focusing on short-term error correlation in simulation of coded high-speed links. While the independent-errors assumption is by default incapable of capturing any error correlation, the following simple extension provides means of capturing varying degrees of short-term error correlation and thus drastically improves the accuracy of the joint error estimates. The approach consists of subdividing a

portion of the residual ISI in high-speed links are dispersion and reflection. In addition, residual interference may also include co-channel interference, caused, for instance, by electro-magnetic coupling (crosstalk). As accounting for co-channel interference involves the same set of mathematical tools as accounting for the ISI, the remainder of the paper focuses on the effects of the ISI. The quantity of interest is the received signal at the input to the decision circuit at time, denoted and Y_i expressed as

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codeword into non- overlapping blocks of consecutive symbols, accurately computing the error statistics for each block, and combining the results assuming the errors across distinct blocks to be independent. Effectively, this replaces the "independent errors" approximation by the "independent blocks" approximation. Although transmitted symbols in separate blocks need not be independent in a coded symbol stream, as the blocks form parts of a larger codeword, shows that it is relatively difficult for a code to achieve consistent pattern- eliminating properties. It follows that the underlying symbol constraints in a coded system likely have little direct effect on the marginal and joint error statistics prior to decoding.8 However, more significant inaccuracies may arise from the error behaviour at the boundaries between blocks, as at least one symbol in each block is affected by the ISI from the preceding blocks. The quality of this approximation for a given codeword length improves with a decreasing number of blocks, which yields a direct method of trading off computing speed for accuracy. To accurately compute the joint error statistics in each block, it is convenient to shorten the channel pulse response by removing the portion of the response tail that creates negligible error correlation. The effect of the tail ISI is treated as mean-distortion and added to the noise term. Based on the above approximations, the performance of a coded high-speed link is estimated as follows. Subdivide the codeword of length into blocks of lengths, where the number of blocks and the corresponding block lengths are chosen based on implementation convenience. For each of the blocks, the error statistics can be accurately computed by considering the possible symbol patterns that affect the corresponding received symbols. Specifically, for the block, it suffices to enumerate all possible symbol patterns of length, where denotes the length of the shortened channel's pulse response, and compute the ISI affecting each symbol in the block. For an uncoded symbol stream, the number of underlying symbol patterns equals.

Then, the probability of observing errors in the block, denoted by, is computed considering the possible error patterns and taking into account the noise. Given the partial error statistics for all and, it remains to compute, that is, the total probability of observing errors in a codeword of symbols where This is achieved by considering all compositions of into parts, that is, the possible vectors, where and The

portion of the residual ISI in high-speed links are dispersion and reflection. In addition, residual interference may also include co-channel interference, caused, for instance, by electro-magnetic coupling (crosstalk). As accounting for co-channel interference involves the same set of mathematical tools as accounting for the ISI, the remainder of the paper focuses on the effects of the ISI. The quantity of interest is the received signal at the input to the decision circuit at time, denoted and Y_i expressed as

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$N_i \rightarrow$ denotes the noise term

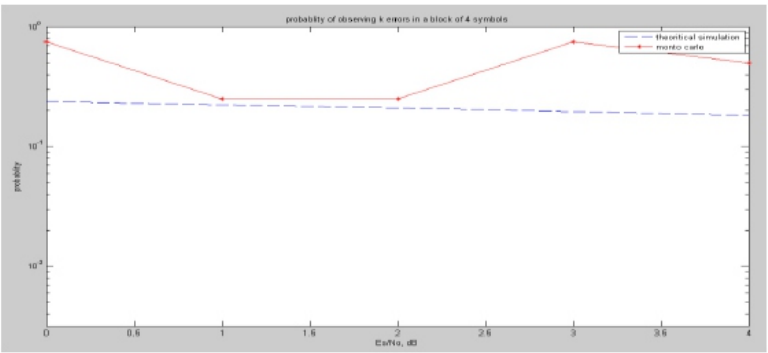
number of possible compositions is given by and the corresponding probability is given by

$$p_m = \sum_{\substack{\text{all compositions} \\ (m_1, \ldots m_k)}} p^{\sim(1)}(m_1) p^{\sim(2)}(m_2) \ldots\ldots p^{\sim(k)}(m_k)$$

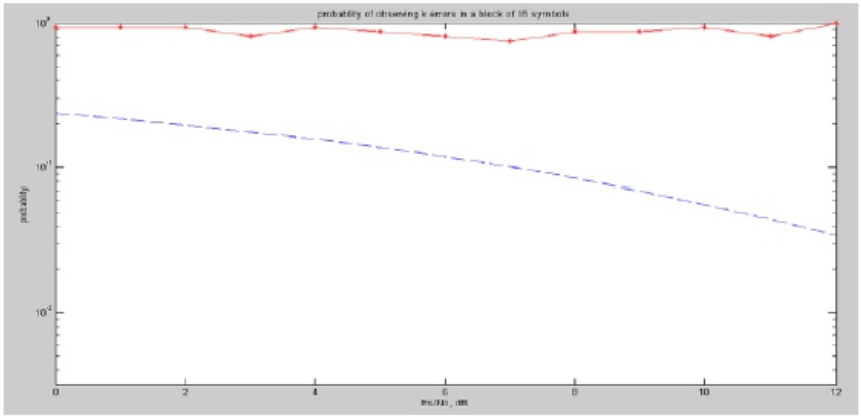
in addition, if the error statistics are equal across the blocks, which occurs if and the symbol stream is considered to be unconstrained, the ordering among the blocks does not need to be considered. The problem therefore reduces to dealing with a partition of into integers. Finally, given the codeword error statistics , the performance of a -error-correcting code, for example, is given by For the high-speed link channel of letting yields the block error statistics of for blocks of[top] and [bottom] symbols. As expected, the results match closely the statistics captured through Monte Carlo simulation. Applying the proposed simulation technique to a codeword of symbols and discounting the code constraints results in performance estimates. At error rates of interest, the estimates based on block sizes of n=4,6,8,10 and symbols yield improvements of four and six orders of magnitude, respectively, over the independent- errors approximation. Though both estimates still fall short of capturing the full extent of error correlation for a system operating under these conditions, the proposed estimation method provides a simple and powerful alternative to the independent-errors approximation. Finally, for practical codeword lengths, the computational complexity of the above method is determined by the shortened channel length, as the number of possible symbol patterns of length is typically large. Based on the block size, the runtime for the previous example is on the order of one minute on a 1.8 GHz processor with 2 GB of memory, for codeword lengths of up to 100 symbols. Pre computing the block-wise statistics further reduces the runtime and allows for the use of larger blocks in systematic code-space explorations.

6. SIMULATION RESULTS

Analyzing the error statistics for 4 symbols



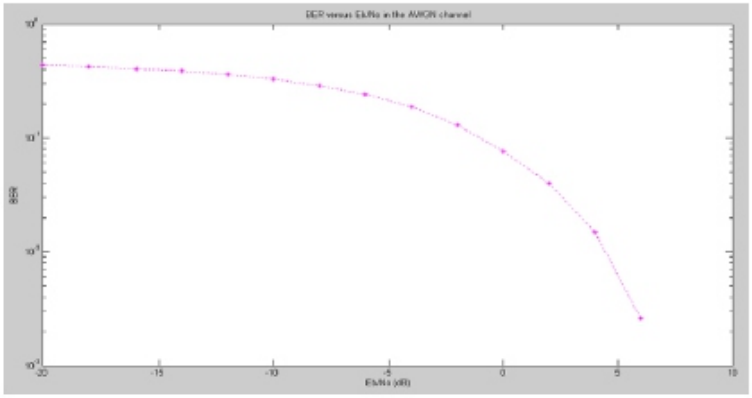
Analyzing the error statistics for 16 symbols



Hamming

The ECC functions described in this application note are made possible by Hamming code, a relatively simple yet powerful ECC code. It involves transmitting data with multiple check bits (parity) and decoding the associated check bits when receiving data to detect errors. The check bits are parallel parity bits generated from XORing certain bits in the original data word. If bit error(s) are introduced in the codeword, several check bits show parity errors after decoding the retrieved codeword. The combinations of these check bit errors display the nature of the error. In addition, the position of any single bit error is identified from the check bits. The Hamming codeword is a concatenation of the original data and the check bits (parity).

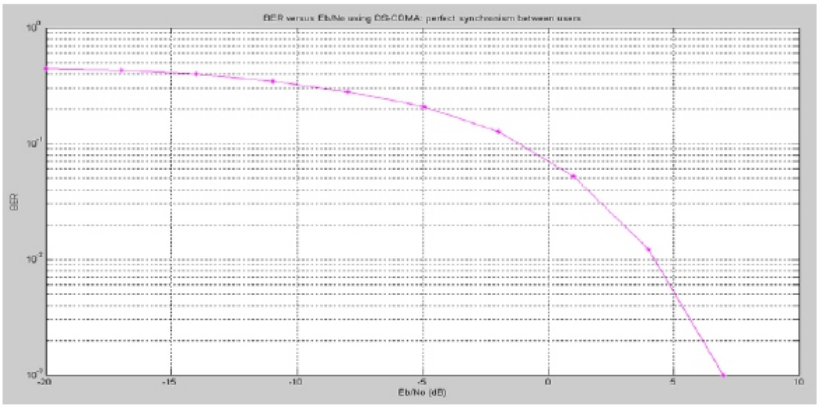
Error Behaviors in the channel using Hamming ECC code



Bose-Chaud-huri-Hocqenghem(BCH) AND Fire codes

A Bose-Chaudhuri-Hocquenghem (BCH) error correction circuit and method including storing normal data and first parity data in a memory cell array, the normal data and first parity data forming BCH encoded data; generating second parity data from the stored normal data; comparing the first parity data with the second parity data; and checking for an error in the normal. A Bose-Chaudhuri-Hocquenghem (BCH) error correction method comprising.

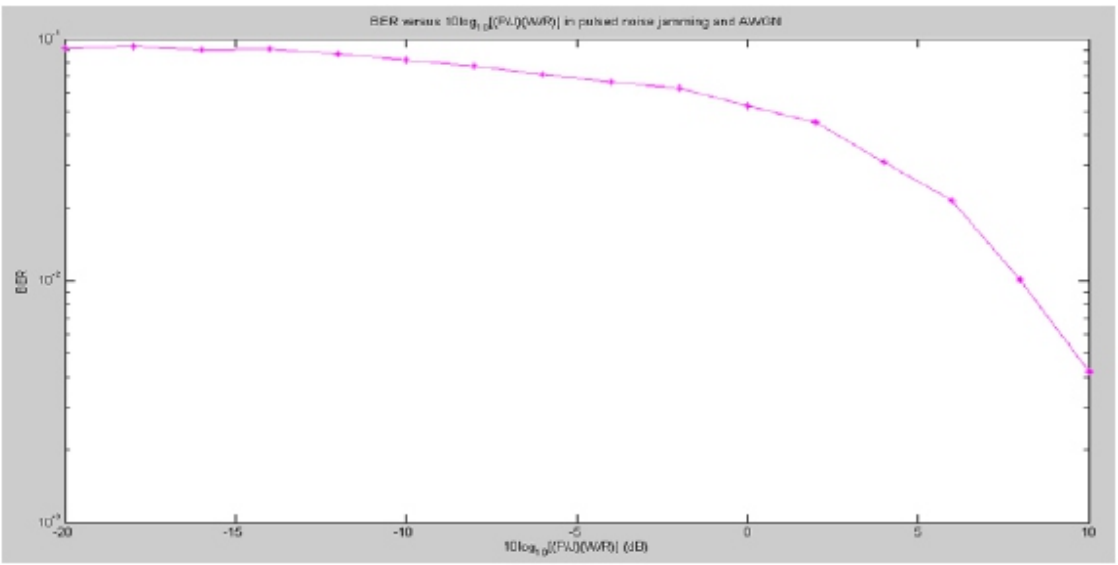
Error behavior in the channel using BCH& Fire codes



Automatic repeat request (ARQ)

Automatic Repeat request (ARQ), also known as Automatic Repeat Query, is an error- Control method for data transmission that uses acknowledgments (messages sent by the receiver indicating that it has correctly received a data frame or packet) and timeouts (specified periods of time allowed to elapse before an acknowledgment is to be received) to achieve reliable data transmission over an unreliable service. If the sender does not receive an acknowledgment before the timeout, it usually re-transmits the frame/packet until the sender receives an acknowledgment or exceeds a predefined number of re-transmissions.

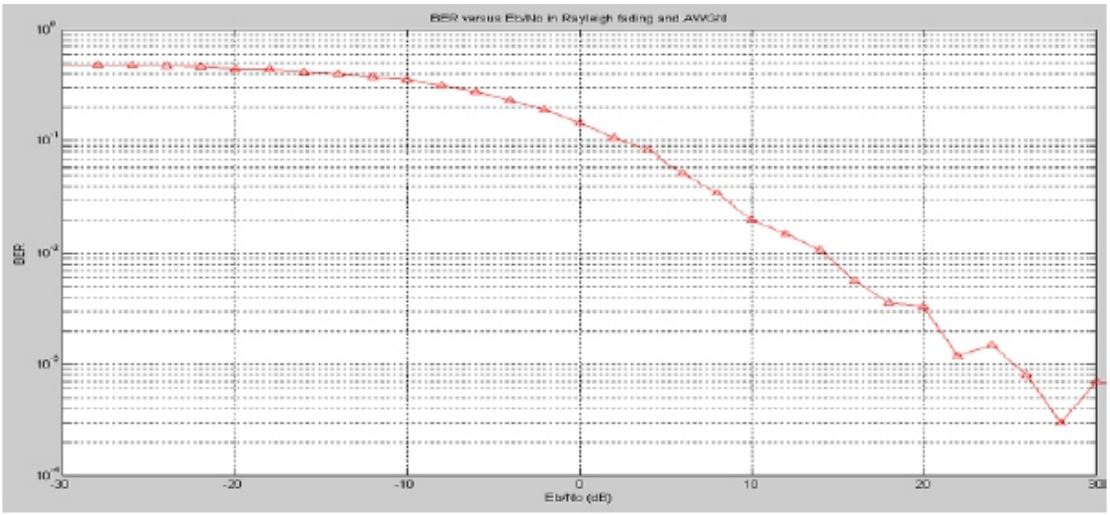
Error behavior in the channel using ARQ error control



SEC-DED with ARQ

To improve system reliability, a designer may wish to provide an automatic error detection and correction circuit. One such example is the data communicated from the microprocessor to peripheral memory devices. This document describes a flow-through method for doing data SECDED with a ARQ.

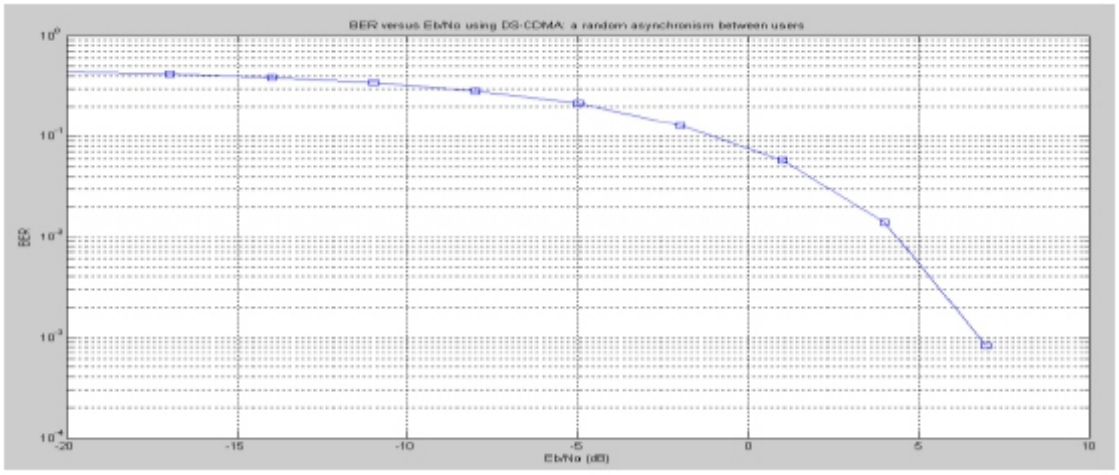
Error Behavior in the channel using SEC-DED with ARQ



Hamming with ARQ

Hamming product codes combined with type-II hybrid automatic repeat request (HARQ), for on-chip interconnects. Input flit width and the number of rows in the product code message are investigated for their impact on the number of wires in the link, codec delay, reliability, and energy consumption.

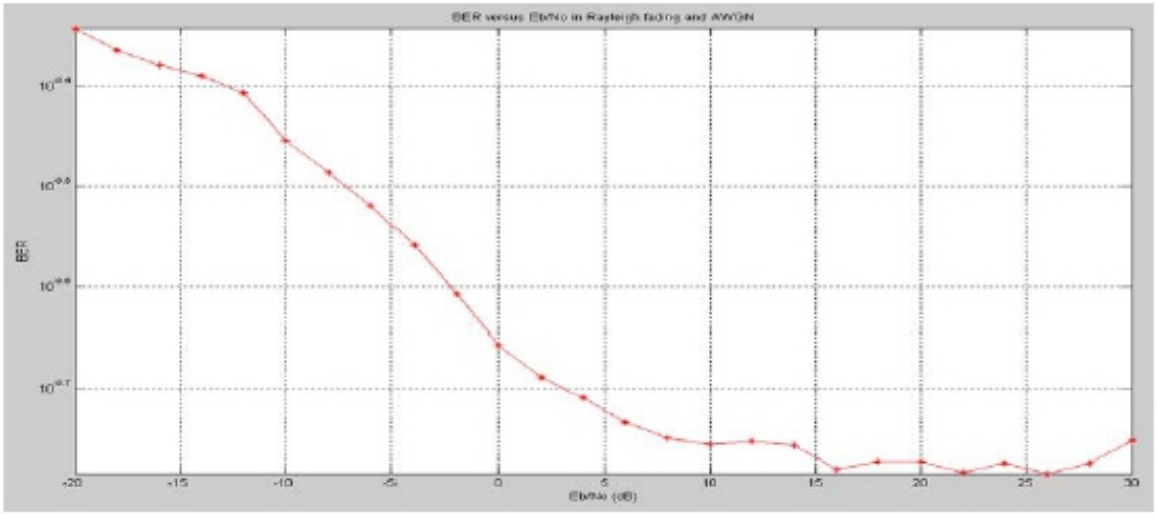
Error Behavior in the channel using Hamming with ARQ



PAM (Pulse Amplitude Modulation)

Pulse-amplitude modulation, acronym PAM, is a form of signal modulation where the message information is encoded in the amplitude of a series of signal pulses. Example: A two bit modulator (PAM-4) will take two bits at a time and will map the signal amplitude to one of four possible levels, for example −3 volts, −1 volt, 1 volt, and 3 volts. Demodulation is performed by detecting the amplitude level of the carrier at every symbol period. Pulse- amplitude modulation is widely used in base band transmission of digital data, with non- base band applications having been largely superseded by pulse-code modulation, and, more recently, by pulse-position modulation.

Error behavior in the channel using PAM



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Migration of Data from One Cloud Server to Another Cloud Server

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***Dean, OIMT, Hissar (Hry.)

ABSTRACT

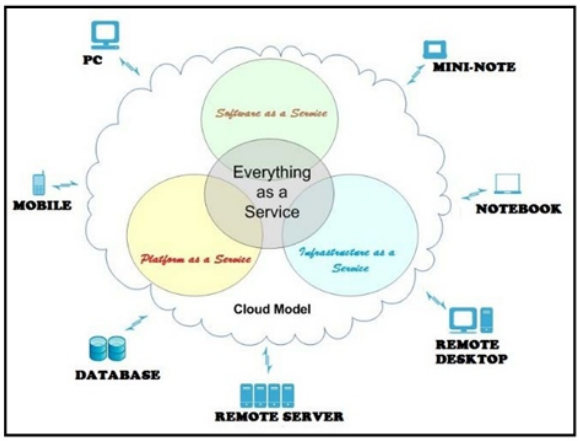
Later engage in Cloud Computing has been determined by new offerings of registering assets that are engaging because of for every use valuing and versatile adaptability, giving a critical playing point over the commonplace procurement and arrangement of gear that was a while ago needed. The impact has been a movement to outsourcing of supplies setup, as well as the continuous IT organization of the assets too.

Keyword: Cloud Computing, Migration, Architecture, Protocol.

1. INTRODUCTION

Cloud computing is the developing standard with changing definitions yet for this exploration venture, it is characterized in the term of a virtual framework which might be gives imparted data and correspondence innovation administrations, by means of a web "cloud," for "various outer clients" through utilization of the Internet or "huge scale private systems." Cloud computing furnishes a machine client access to Information Technology (IT) benefits i.e., requisitions, servers, information space, without obliging a comprehension of the engineering or even responsibility for foundation. To fathom Cloud computing, a relationship to a power computing network is to be handy. A force organization keeps up and possesses the framework, a circulation organization disperses the power, and the purchaser just uses the assets without the possession or operational obligations. Cloud computing is getting an incredible arrangement of consideration, both in productions and around clients, from people at home to the U.s. government. Cloud computing is a membership based administration where you can acquire arranged space and machine assets. One approach to consider Cloud computing is to think about your experience with email. Your email customer, in the event that it is live, Gmail msn, et cetera, deals with lodging the sum of the equipment and programming important to backing your particular email account. When you have to get access to your email you open your web project, take off to the email client, and log in. The most discriminating some bit of the numerical proclamation is having web access. Your email is not housed on your physical machine; you gain access to it through a web association, and you can gain access to it anyplace. Assuming that you are on a trek, at work, or down

the road getting espresso, you can check your email as long as you have admittance to the web. Your email is unique in relation to programming introduced on your workstation, for example, an expression handling system. When you make an archive utilizing word handling programming, that record stays on the mechanism you used to make it unless you physically move it. An email customer is like how cloud computing functions. But as opposed to entering simply your email, you can pick what data you have admittance to inside the cloud. Essentially, a client's cloud computing access empowers "imparted assets, programming, and data on-interest" on an expense for- administration premise.



Cloud computing Model

According to the National Institute of Standards and Technology (NIST), cloud computing shows several characteristics:

- Agility improves with users' ability to re-provision technological infrastructure resources.
- Application programming interface (API) accessibility to software that enables machines to interact with cloud software in the same way the user interface facilitates interaction between humans and computers. Cloud computing systems typically use REST-based APIs.
- Cost is claimed to be reduced and in a public cloud delivery model capital expenditure is converted to operational expenditure. This is purported to lower barrier to entry, as infrastructure is typically provided by a third-party and does not need to be purchased for one-time or infrequent intensive computing tasks. Pricing on a utility computing basis is fine-grained with usage-based options and fewer IT skills are required for implementation (in-house). The e-FISCAL project's state of the art repository contains several articles looking into cost aspects in more detail, most of them concluding that costs savings depend on the type of activities supported and the type of infrastructure available in-house.
- Device and location independence enable users to access systems using a web browser regardless of their location or what device they are using (e.g., PC, mobile phone). As infrastructure is off-site typically provided by a third-party and accessed via the Internet, users can connect from anywhere.

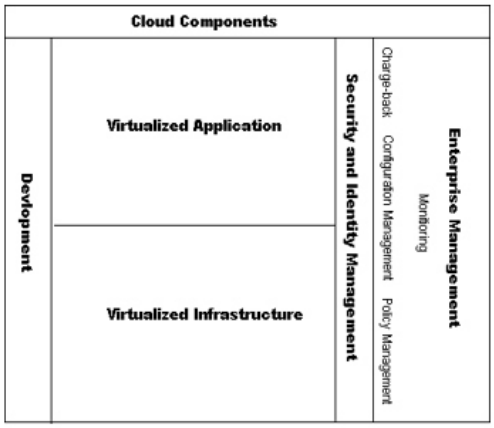
- Virtualization technology allows servers and storage devices to be shared and utilization be increased. Applications can be easily migrated from one physical server to another.

2. IT ARCHITECTURE EVOLUTION

Construction modeling develops over the long run. In the 1960s and 1970s, the first wave of computing involved of extensive, costly, work concentrated, solid servers that could be viewed as the progenitors of the mainframe. Inner assets were pooled and substantial utilization was made of virtualization to guarantee that the precise best was made of these exceptionally unmanageable assets.

In the 1980s and 1990s, with the ascent of Pcs, the contracting expenses of systems administration and computing foundation, and a requirement for additional spryness, client/server gave the capacity to part the provision level far from the server level. This was carried out to help Cloud customers running wealthier client interfaces and likewise to diminish sets back the ol' finances by offloading the client taking care of, provision workloads off solid servers. These bigger servers stayed to address monstrous group handling and exploratory workloads. In the 2000's, as server farms began to round out, and power, space and cooling got to be more unmanageable, ideas, for example, product lattice computing and virtualization began to get secured. Distributed computing takes these ideas further by permitting administration toward oneself, metered utilization and more robotized element asset and workload administration hones. As administrations got to be more disseminated, SOA developed as a technique to incorporate and organize conveyed business administrations. By and large, today's Cloud was dependent upon foundational ideas that tended to an unanticipated requirement to best power computing assets very nearly 40 years prior. An expansive solid server was not difficult to secure with respect to a virtualized asset on the Cloud. Security is still the most obvious concern of numerous clients who need to power open Cloud benefits today.

3. ARCHITECTURAL STRATEGIES FOR CLOUD COMPUTING



CloudBuilding Blocks

4. REVIEW:

Migration of the entire data along with the architecture has always been an issue to be discussed. The main reason behind that is each and every cloud server uses its own type of protocol for the communication. Several researchers have put their methodology in this contrast. Here is an overview for some of them.

- The general migration issue raises when your data is not secure at the one platform. Now the issue comes that whether we can migrate the data with the architecture from one end to another. He proposed that if we can use the tcp ip technique to find out at which server the data is going to be migrated and if we can configure it to the server from where the data has to be migrated can make a difference into the migration but he did not talk about how an existing architecture allows the second server to be configured into itself.
- The issue of the tcp proto calling in their research work in their published paper. They said that to configure an IP which does not belong to the server at which you are currently in, one can use the IAAS SERVICES of the cloud .IAAS is the INFRASTRUCTURE AS A SERVICE thing which is one of the basic entities of the cloud platform. Now to configure IAAS at your system, one will have to purchase the licensed version of the cloud space. The migration can be done using any platform but the basic issue is whether hundred percent data will be migrated or some data loss would be there.
- The opinion about the database services of the cloud to solve out the upper issues of the cloud platform. They say that whatever cloud platform you are using, they provide sql query service to get the query execute into the system. So a scheme of scripts came into action from the very that moment. For this purpose Microsoft adapted a Script wizard service to migrate the data along with the architecture but somehow it did not work appropriately.
- The ecofriendly migration of data through the advanced scripting system. If we see for an example of SQL SERVER 08 it can encrypt the data along with the architecture and it consumes a less amount of energy also if we can run the advanced script over the cloud. For this proposal to take place, other cloud services started working on it and as a result we can see different cloud servers using run a script method into their architecture as software as a service parameter.

5. ALGORITHM

```
int counter =0;
int k=1;//for the fileds specified by user ;
if(model.Is Selected ) // If the client has selected the specific model for his entry
{for(int i=0;i<counterfiled;i++)
```

```
{if(counterfield.checked==true
{ Rbsc rbc=new rbac(); rbc.roles.add(counterfiled.text); if(user.confirms.rbc.roles.added==true)
{put (xml.schema.action);
}
}
Else
{Move.next();
}
For(int i=0;i<filedcount;i++)
{for(k!=null) Draw(xmlschema.xml.rbc()) ; Xmlschema.rbc.fieldcount=filedcount ;Xmlschema.
xmltag=new xmltag("<"+filedname+">"); Xmlschema.xmltag=new xmltag("<"+filedna
me+"/>"); Xmlschema.show(); Put.Azure(spcefilled.rest.databaseschema);
Exit Count++;
}
}
Else
{
This .close();
Goto whileback; // to return to main program
}
}
```

6. PROBLEM STATEMENT

In this quick moving universe of digitization, distributed computing is turning into a key some piece of the day by day life assuming that you are sort of identified with the business. Keeping the information secure on the server has turned into one of the significant issues. To beat this issue distributed computing has developed into the world yet it is truly unmanageable. Presently the issue is whether you need to relocate the information plus its construction modeling starting with one server then onto the next, it is vital to keep the information secure and protected until and unless it arrives at to the server end. As though for the time being, one convention construction modeling does not permit an alternate convention building design to convey specifically, our issue gets figuring out an exceptional crossbreed provision structural engineering which can change over one convention construction modeling into a halfway building design which is totally justifiable by an alternate administration structural engineering so we can climb the whole information building design plus the information starting with one server close then onto the next without any information misfortune

7. SUMMARY

For IT divisions in bigger ventures, creating a private cloud frequently makes the most fiscal and business sense. The point when creating the design vision, a venture engineer might as well take notice the qualities of distributed computing and also think as of a percentage of the organizational and social issues that may get to be hindrances to the reception of what's to come state construction modeling. The point when pushing forward, choices must be made on if what's to come state specialized building design might as well accentuate similarity with the present standard or begin sans preparation to minimize cost. Future state frameworks building design outlines include exchange offs between more level cost/operational effectiveness and more terrific adaptability. Utilizing an Enterprise Architecture structure can help venture modelers explore the exchange offs and plan a framework that fulfills the business objective.

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