

# Overview of wireless Technology

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*Abstract*-PC frameworks have accepted a noteworthy activity in developing as far as possible in affiliations today. So far standard methods for frameworks organization, which incorporates PCs, wired clearly to an inside point or switch are the norm. Ordinary occurrences of security abuses are SQL mixture, Cross Site Scripting and Cross Site Sales Distortion which abuse security openings that may result from unsatisfactory programming practice. Various undertakings would have the choice to be used through FTP, HTTP, PHP, SSH, Telnet and some site pages. This paper going with investigation paper presents an audit concerning rising development of Remote Broadband frameworks. It focuses on the history, instruments, guidelines and utilization of Wi-Fi frameworks. Around the completion of the nineteenth century, the principle remote correspondence systems were introduced and the development has in a general sense been made over the intervening and resulting years. Today, the term remote insinuates a combination of devices and advances running from PDAs to workstations, tabs, PCs, printers, Bluetooth, etc. Frameworks organization over UHF clear regions is on an essential level exceptional from standard Wi-Fi along three tomahawks: spatial assortment, common assortment, and crack of the UHF extend. Every one of these differentiations offers live up to individuals' high desires for executing a remote framework in this band.

*Categories and Subject Descriptors:* [Computer-Communication Network] Wireless communication and Wi-Fi Technology.

*General Terms:* Algorithms, Design, Experimentation.

*Keywords:* white spaces, Wi-Fi, Cognitive radios, dynamic spectrum access, Security, Speed

## 1. INTRODUCTION

The unused segments of the UHF range, prominently alluded to as "blank areas", speak to another outskirts for remote systems, offering the potential for generous data transfer capacity and long transmission ranges [1]. These blank areas incorporate, yet are not constrained to, 180 MHz of accessible transmission capacity from channel 21 (512 MHz) to 51 (698 MHz), except for channel 37. Prior during the 1970s to the late 1980s, the Web was possessed and supported by the US government and in this way was for the most part utilized for government correspondence and research exercises, which was profoundly limited to scholarly and military purposes. It was administrated by the National Science Establishment (NSF). By 1995, anyway the NSF halted the organization of the Web. The Web was announced and business use was allowed [2-4].

Bahrain Media transmission Organization (BATELCO) was one of the pioneers to embrace the Web innovation. This reality has reinforced BATELCO's situation as a main correspondence supplier in the locale. Media transmission has become a basic piece of our day by day lives and has been contributing generally to the progression in different fields. One of the developing modes is Remote broadband innovation which transmits multiplexed data on a wide band of frequencies [5]. Remote innovations are intended to lessen the time and various sorts of impediments made by links and more helpful than wired systems administration. In 1997, 'Wireless constancy prominently known as Wi-Fi innovation was created by IEEE 802.11 measures which gave clients the freedom to interface with the web from any place. But this administration was entirely costly till 2002, anyway the new 802.11g norms in 2003 has lead to

making of Wi-Fi empowered gadgets to the majority subsequently today a Wi-Fi switch has gotten a family ware in most present day homes in India [6].

As of late, the remote correspondence innovation has become a basic piece of a few sorts of specialized gadgets as it permits clients to impart even from remote regions. The gadgets utilized for remote correspondence are cordless phones, mobiles, GPS units, ZigBee innovation, remote PC parts, and satellite TV, and so on. Clients of remote neighborhood (WLAN) gadgets have adaptability to move their PCs one spot to another inside their workplaces while keeping up network with the system [7].

Remote individual systems permit clients to share information and applications with arrange frameworks and different clients with perfect gadgets, without being attached to printer links and other fringe gadget associations. Over the last couple of years, Wireless Fidelity or "Wi-Fi" has quickly grown to become the dominant wireless LAN standard [8]. Because it operates in unlicensed frequency bands, anyone can set up a Wi-Fi network and cover an area of typically 100-500 feet with high speed wireless access to a LAN and hence to the Internet. Unlike other wireless technologies like GSM or CDMA, [9-11] Wi-Fi has also become a universal standard. Therefore, Wi-Fi parts are currently on a quick cost decrease bend as volumes increment. And it is widely distributed and used in many different parts of the world [13].

We center basically around the issue of setting up a Wi-Fi like system comprising of a Passageway (AP) with various related customers. We leave the instance of assessing various APs with numerous customers as follow-on work. Our answers are integral to the continuous work in the IEEE 802.22 Working Gathering [14], as we talk about in Segment 7. Wi-Fi is the term used to portray a class of ensured remote systems administration items fitting in with an industry standard assigned by the Organization of Electrical and Hardware Specialists (IEEE) as "802.11b", it is another innovation that is favored for remote neighborhood in both business and home situations [15-17].

## 2. LITERATURE REVIEW

Paramvir Bahl<sup>1</sup>, Ranveer Chandra<sup>2</sup>, Thomas Moscribroda<sup>3</sup>, Rohan Murty<sup>4</sup>, Matt Welsh<sup>5</sup> et al[18]. Systems administration over UHF void areas is in a general sense unique in relation to traditional Wi-Fi along three tomahawks: spatial variety, fleeting variety, and fracture of the UHF range. Every one of these distinctions offers adapt to the situation for executing a remote system in this band. We present the design and implementation of White-Fi, the first Wi-Fi like system constructed on top of UHF white spaces.

Adel Ismail Al-Alawi et al [19]. Wi-Fi is a perfect example of one of these emerging technologies, which has enabled computers to communicate with each other without the use of traditional cables. The usage of WiFi as for future market openings in the Kingdom of Bahrain will be talked about in this investigation. Finally, an analysis of various demographics will be outlined with particular concentration on the acceptance of Wi-Fi by society in the Kingdom of Bahrain. Some concerns along with recommendations, which need to be taken into account when using Wi-Fi are also outlined

Surabhi Surendra Tambe et al [20]. - The accompanying exploration paper presents a diagram in regards to the developing innovation of Wireless Broadband systems. It centers around the history, tools, standards and execution of Wi-Fi networks. However the primary reason for this examination paper is to comprehend the different issues related with the usage of these WLANs and propose suggestion and measures to take care of these issues and moderate potential hazard factors

Sonu<sup>1</sup>, Surender Singh<sup>2</sup> et al[21]. In the event that our remote switch doesn't have an encryption highlight, consider getting one that does. Producers regularly convey remote switches with encryption include killed. In this way we need to instruct people and associations on the most proficient method to ideal use security highlights. In this exploration we have upgraded remote system by presenting triple layer security component.



### **I.WHAT IS WI-FI?**

Wi-Fi is the famous name for the remote Ethernet 802.11b standard for WLANs and it refers to the innovation encompassing the radio transmission of the Web convention information from a Web association remotely to a host PC. Most frequently the Web association is a higher speed one such as satellite, DSL or link instead of slower dial-up associations.

It is basically a remote association between your PC and the Web association (For example DSL switch or link modem) in your home [22]. 'Wireless Loyalty' Wi-Fi alludes to an over-the-air association with a remote customer and a base between two remote customers [23].

### **II.THE DRIVERS AND NATURE OF THE PRESENT WI-FI**

Numerous drivers had developed throughout the years that made internet banking an absolute necessity. This is the ideal opportunity for arranging a preliminary of neighborhood Wi-Fi administration, [24-25] at a significant shopping center and various inn anterooms, as an option in contrast to rolling out a 3G arrange. The arrangement depends on urban format furthermore, social conduct. So, the individuals like to 'bunch' out in the open places, for example, shopping centers, cafés also, lodgings - prime areas for Wi-Fi ennoblement [26].

As in Bahrain, BATELCO's Head of Corporate Issues, clarified: "Bahrainis needn't bother with the sort of progressing administration that 3G is intended to offer. The

Realm has negligible open vehicle since it has a 'vehicle culture' - so no interest exists there for 3G.

### **III.POINTS OF INTEREST OF WI-FI:**

Another bit of leeway of Wi-Fi organize is that the accessibility of Wi-Fi items in the advertise has expanded broiler the most recent three years. Numerous organizations endeavor to guarantee that clients get the most refreshed programming and equipment gear so as to permit them to get to a Wi-Fi organize.

Due to the wide accessibility of items in the market the issue of estimating assumes a critical job here. Obviously advertise powers are a significant determinant of the costs accessible on items today. Additionally, considering versatility is a favorable part of a Wi-Fi arrange. Individuals will have the option to move about the given hotspot without loosing the system association of Wi-Fi [27].

### **IV.DETRIMENTS OF WI-FI**

Impediment or limitation is situation. When utilizing a Wi-Fi arrange the recurrence detail utilized is 802.11b, which is the equivalent recurrence that numerous PDAs, blue tooth, microwaves work on. So it is in the hands of the Wi-Fi clients to pick a passage that isn't near the one of the gadgets referenced, in light of the fact that interference will happen and this may cause lost sign or it might break down the association [28].

Therefore, Remote systems are one of the quickest developing innovations in broadcast communications advertise. WI-Max, Bluetooth, Wi-Fi, Femtocell and 4G are probably the most huge principles of Remote innovation for the following ages.

### **3. TYPES OF WIRELESS COMMUNICATION TECHNOLOGIES**

As of late, the remote correspondence innovation has become an indispensable piece of a few kinds of specialized gadgets as it permits clients to convey even from remote regions. The gadgets utilized for remote correspondence are cordless phones, mobiles, GPS units, ZigBee innovation, remote PC parts, and satellite TV, and so forth.



**I.WI-FI**

Wi-Fi is a type of low-power remote correspondence utilized by numerous electronic gadgets, for example, workstations, frameworks, advanced cells, and so on. In a Wi-Fi arrangement, a remote switch fills in as the correspondence center point.

These systems are amazingly restricted in extend because of low intensity of transmissions permitting clients to interface just inside nearness to a switch or sign repeater.



**WI-FI**

**II. BLUETOOTH INNOVATION**

Bluetooth innovation permits you to interface a wide range of electronic gadgets remotely to a framework for the exchange and sharing of information and this is the

principle capacity of Bluetooth. Mobile phones are associated with without hands earpieces, remote console, mouse and mike to PCs with the assistance of Bluetooth as it transmits data from one gadget to other gadget. Bluetooth innovation has numerous capacities, and it is utilized most usually in remote correspondences' market.

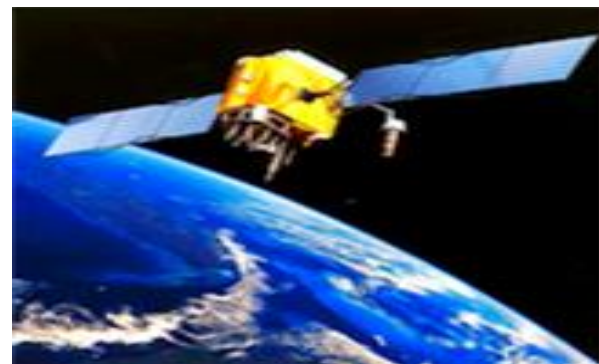


**Bluetooth Technology**

**III.SATELLITE**

Satellite correspondence is one of the remote advances, which is broadly spread everywhere throughout the world permitting clients to remain associated practically anyplace on the Earth. The Satellites utilized in this method of correspondence, discuss straightforwardly with the circling satellites by means of radio signs.

Compact satellite telephones and modems have more remarkable telecom capacities than the cell gadgets as they have high range, aside from being increasingly costly as far as cost, than their partners.



**Satellite**

**IV.ZIGBEE**

ZigBee is a remote correspondence standard intended to address the special needs of low-power, ease remote sensor, and control systems. ZigBee can be utilized anywhere, as it is anything but difficult to execute and requires little capacity to work [29].

ZigBee devices are designed for low-power consumption. ZigBee is utilized in Commercial Applications like detecting and checking applications.



**ZigBee Technology**

**V.WI-MAX**

There are remote broadband frameworks that offer quick Web surfing without being getting associated through link or DSL (Case of remote broadband is WI-MAX). In spite of the fact that WI-MAX can possibly convey information paces of in excess of 30 Megabits for every second, yet the suppliers offer normal 0 information paces of 6 Mbps and frequently convey less, making the administration fundamentally more slow than the hard-wired broadband [30].

The real expense of the information accessible utilizing WI-MAX broadly differs with the good ways from the transmitter. WI-MAX is likewise one of the adaptations of 4G remote accessible in telephones as run’s 4G innovation. Bluetooth innovation utilizes radio waves to impart between gadgets. A large portion of these radio waves have a scope of 15-50 feet. According to the authority Bluetooth site, Bluetooth utilizes a low-power signal with a greatest scope of 50 feet with adequate speed to empower transmission of information.



**Wireless Network**

**VI.INFRARED (IR)**

Infrared is a media transmission framework that transmits information flags through light producing diodes (LEDs) or Lasers. Infrared is an electromagnetic vitality at a frequency which is longer than that of the red light. The sign recurrence to transmit in a point to point framework is 100 GHz to 1,000 terahertz (THz), and the speed ranges from 100 Kbps to 16 Mbps.

Another technique for transmission of infrared incorporates the communicate framework – and, in this strategy, an intelligent material or a transmission unit enhances and retransmits an information sign to a few different units. The typical recurrence of an infrared communicate framework is 100 GHz to 1,000 THz with a constrained speed of 1 Mbps [31].



**Infrared Technology**

**VII. WHITE-FI STRUCTURE**

In this area, we depict the White Fi configuration in detail. White-Fi is an execution of a Wi-Fi like convention on the UHF blank areas that tends to the key difficulties depicted before. We plan our framework on the equipment depicted in the past area, with one handset and one scanner. Likewise, we center on frameworks with a solitary information rate (since rate adjustment itself is an open issue in white spaces). In the accompanying, we utilize the term channel to speak to a scope of the UHF range on which a White Fi AP or customer conveys [32].

A channel is spoken to as a duple (F, W), where F is the middle recurrence, and W is the width of the channel. In our present execution, W can be either 5 MHz, 10 MHz, or 20 MHz, yet our equipment is commonly fit for utilizing more channel width choices. Conversely, the term UHF channel demonstrates one of the 30 fragments of the UHF range, which are every 6 MHz wide.

Note that in our current equipment execution, channels are constantly focused at an UHF channel's middle recurrence [33]. Subsequently, a 5 MHz White Fi channel can fit inside a solitary UHF channel, a 10 MHz channel ranges 3 UHF channels, and a 20 MHz channel traverses 5 UHF channels.

**4. CHANNEL EXAMINING**

To test for another potential channel, the AP must have data about the range map and broadcast appointment usage saw at every one of the customers. Customers occasionally transmit this data to the AP as a major aspect of a control message. When bootstrapping, the AP won't have any customers and will perform channel choice without customer input. The initial step is to take the bitwise OR of the customers' and AP's range maps,  $u^?$ , to decide the arrangement of UHF channels accessible at all of the hubs.

The subsequent advance is to think about every conceivable channel (F, W) in the accessible void areas, and gauge the total transmission capacity that the AP and customers would get if choosing that channel [34]. This is a component of the occupied broadcast appointment  $A_{nc}$  on the channel c as estimated at n, just as the gauge of the number of different passageways working on c, which we signify  $B_{nc}$ .

This worth can be resolved for example by utilizing the filtering radios also, the Filter strategy (Segment 4.2.1). For each hub n and any UHF channel c, we characterize.

1.  $\rho_n(C) = \text{Max}(1-A^n_c, (1/B^n_c + 1))$
2.  $M_{\text{Chamn}}(F,W) = (W/5\text{MHz}) \cdot \pi \rho_n^{(c)} c \in (F,W)$

**SPECULATION AND METHODOLOGY**



**5. THE EXAMINATION SPECULATION**

A theory can be characterized as a legitimate notion, a sensible conjecture or an instructed guess. Moreover, it can give a provisional clarification for a wonder under examination and it could include a forecast that may or on the other hand may not be borne out in the information. It ought to be taken note that speculation never demonstrated or invalidated, either upheld or not bolstered by the information and after some time as specific speculation are bolstered by a developing body of information, they develop into speculations.

**6. SPECULATION**

Low association speed will never again be an issue with Wi-Fi as there is a progressively devoted speed with Wi-Fi.

**7. THE RESEARCH METHODOLOGY**

Both up close and personal meetings and poll were utilized. Vis-à-vis interviews support potential member and increase their co-activity subsequently yielding the most noteworthy reaction rate in a study examines. They additionally permit the respondent to pose about any questionable inquiries and in a similar time

permit the analyst to look for development data [35]. Meetings were directed with those agents.

In light of the goals and the speculation, the questions were set in the survey so as to test them and at last to affirm or disconfirm the proposed speculation, for example the survey will reflect the exploration speculation in an immediate manner as a technique for testing it alongside the target.

The analyst picked a blend of both subjective what's more, quantitative strategy methods so as to lead data about our examination point.

We pick this way to deal with assistance us screen and inspect the appearance of this new remote innovation, which is called Wi-Fi and to tackle its optical and to inspect if this innovation will be recipient to open new interests in Bahrain furthermore, increment the achievement of old speculations [36].

Fifty duplicates of the poll were appropriated to focus on the clients that will utilize this innovation and how would this be able to expand the efficiency of their work.

Where Did you Hear about WI-FI	Sample
Friends	7%
Newspaper & Magazines	7%
No Answer	18.6%
Other Resources	18.6%
Internet	48.4%

**Table 1: Respondents Learned about Wi-Fi**

Wi-Fi Factors	Strongly agree	Agree	Neither	Disagree	Strongly Disagree
1.Speed	39.5%	20.9%	12.8%	14%	12.8%
2.Cost	39.5%	20.9%	18.6%	14%	7%
3.Stable Connectivity	30.2%	27.9%	25.6%	14.5%	2.3%
4.Convenient	34.9%	44.2%	11.6%	9.3%	0%
5.Security	53.5%	20.9%	11.6%	9.3%	4.7%
6.Time saving	39.5%	32.5%	18.6%	4.7%	4.7%

**Table 2: Scale of WI-FI Factors**

The vast majority of the respondents were between the time of 20 and 30 years old. 58.1% of the respondents were utilized and 74.4% of our examples knew about the remote innovation. About 81.4% of our example caught wind of WIFI and the vast majority of them utilized it. We found out that 46.5% of the significant explanation fleeing from utilizing WIFI is the absence of mindfulness.

At the point when the respondents were asked from where did they find out about Wi-Fi? show that the greater part 48.4% found out about Wi-Fi from the Web. As outlined in over half of respondents never utilized the Wi-Fi or didn't react to

this inquiry [37]. At the point when the respondents were asked how much of the time they utilize the Wi-Fi? From the individuals who utilized the Wi-Fi 23.3% utilized the administration once in a while.

At the point when the respondents were asked what are the reasons that would individuals use Wi-Fi over other Web associations? As Table 4 outlines that the greater part 20.9% said that since it is increasingly helpful. At the point when the respondents were asked as they would like to think, what are the reasons that would drive individuals from utilizing Wi-Fi innovation? As it is delineated in Table 5, most of the respondents concurred that the

major burden of Wi-Fi is the absence of mindfulness [38].

In the Table 6 the inquiries are partitioned into six Components concerning speed, cost, stable availability, persuades, efficient and security issues related to Wi-Fi. The vast majority of the respondents emphatically concur that the security has the most noteworthy pace of significant, while Speed, Cost and Efficient are give a similar rate 39.5%, follows by Helpful than Stable Network 30.2%.

## 8. DISCUSSION AND FUTURE WORK

Blank area organizing gives an extraordinary chance to clean late arrange configuration, inferable from the absence of existing guidelines. Our choice to fabricate the White Fi model with a Wi-Fi card was spurred by a few elements. Wi-Fi is an adult, surely knew innovation that is economical and effectively accessible. A few remote card merchants we have spoken with are thinking about pushing some variant of Wi-Fi to the IEEE measures body for blank area organizing. Also, Wi-Fi empowered us to manufacture a model rapidly and center on a portion of the higher layer gives that are to some degree skeptic to the current physical and Macintosh conventions.

In any case, we do understand that elective plans are conceivable and might be utilized in future systems. We examine a couple of these beneath. White Fi use the procedure depicted in [40], which requires the AP and its customers to work over the equivalent bordering lump of range. An elective strategy may utilize a PHY layer that works over non-touching range pieces. The AP would then be able to work over the whole data transfer capacity, deciphering signals from the various customers who might be utilizing diverse OFDM subcarriers.

For AP-to-customer correspondences, the PHY layer could either smother or impart an invalid sign on the subcarrier that the essential client is utilizing [42]. Earlier work has proposed the utilization of control channels to save transfer speed and range [43, 44]. While there are favorable circumstances to a control channel structure, we accept that control channels can be traded off, in this

manner cutting down the system. Likewise, control channel based arrangements are inclined to the range-bungle issue [45]. We conquer these issues by not utilizing a devoted control channel. White Fi utilizes reinforcement direct in the blank areas (rather than 900 MHz).

## 9. ACKNOWLEDGEMENT

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## 10. CONCLUSION

White Fi contributes another range task calculation that tackles the double difficulties of spatial variety of accessible range and range fracture. We further depicted another component that rapidly finds APs working anyplace in the 180 MHz void area, utilizing any subjective channel width. We likewise portrayed another procedure for dealing with separations where customers sign to the AP without meddling with progressing remote amplifier transmissions [46].

In the interim the number of sellers continues expanding, the innovation continues improving and more affordable and with the as of late finished IEEE 802.11 norm, interoperability between sellers is getting less of an issue. Additionally, advantageous structure factors, for example, PC Cards are getting normal, Associations and people advantage when remote systems and gadgets are secured. Subsequent to evaluating the dangers related with remote innovations, associations can lessen the dangers by applying countermeasures to address explicit dangers and vulnerabilities [47].

It is critical to fabricate frameworks what's more, organizes so that the client isn't constantly remained of the security framework around him. Clients who discover security approaches and frameworks too prohibitive will discover ways around them. We exhibited White Fi with regards to our uniquely manufactured model UHF equipment



and Quall Net reenactments. As a feature of continuous work, we are sending White Fi over a ground wide white space arranges.

## REFERENCES

1. IEEE 802.22 Working Group on WRANs, In private conversations with Adaptrum.
2. FCC press release, FCC Acts to Expedite DTV Transition and Clarify DTV Build-Out Rules. November 2001.
3. Demonstration of a Prototype Dynamic Spectrum Access System, Philips Research. In DySPAN demo session, 2008.
4. FCC press release, Evaluation of the Performance of Prototype TV-Band White Space Devices. November 2008.
5. FCC press release, FCC Adopts Rules for Unlicensed Use of Television White Spaces. November 2008.
6. S. Narlanka, R. Chandra, P. Bahl, and I. Ferrell. A Hardware Platform for Utilizing the TV Bands with a Wi-Fi Radio. In IEEE LANMAN, June 2007.
7. H. Rahul, N. Kushman, D. Katabi, C. Sodini, and F. Edalat. Learning to Share: Narrowband-Friendly Wideband Wireless Networks. In SIGCOMM, 2008.
8. A. W. Rix, J. G. Beerends, M. P. Hollier, and A. P. Hekstra. Perceptual Evaluation of Speech Quality (PESQ)-A New Method for Speech Quality Assessment of Telephone Networks and Codecs. In IEEE International Conference on Acoustics, Speech, and Signal Processing, 2001.
9. K. Tan, J. Zhang, J. Fang, H. Liu, Y. Ye, S. Wang, Y. Zhang, H. Wu, W. Wang, and G. M. Volker. SORA: High Performance Software Radio Using General Purpose Multi-core Processors. In NSDI, 2009.
10. Y. Yuan, P. Bahl, R. Chandra, P. A. Chou, I. Ferrell, T. Moscibroda, S. Narlanka, and Y. Wu. KNOWS: Kognitiv Networking Over White Spaces. In DySPAN, 2007.
11. R. Chandra, R. Mahajan, T. Moscibroda, R. Raghavendra, and P. Bahl. A Case for Adapting Channel Width in Wireless Networks. In SIGCOMM, 2008.
12. Al-Alawi, A.I., 2005. Lecture notes, Available online from userspages.uob.edu.bh/aalalawi. Accessed 15 March 2005.
13. Lewis, M., 2003. Living the WiFi High Life. MSNBC News. 16 Oct.
14. Ni,Qiang,Romdhani,Lamia,and Turletti,Thierry,"A Survey of QoS Enhancements for IEEE 802.11 Wireless LAN",Journal of Wireless Communication and Mobile computing,Vol.4,No.5,2004,pp547-566.
15. 3GPP: Standards organization associated with ITU.
16. Gast, Matthew, 802.11 Wireless Networks:The Definitive Guide,2nd Edition,O'Reilly Media,Inc.,2005.
17. Michael Ekonde Sone," Efficient Key Management Scheme to Enhance Security-Throughput Trade-off Performance in Wireless Networks", Science & Information Conference 2015 July 28-30.
18. Natasha Saini1, Nitin Pandey2, Ajeet Pal Singh3," Enhancement Of Security Using Cryptographic Techniques", 978-1-4673-7231-2/15©2015 IEEE.
19. Takahiro Fujita, Kiminao Kogiso, Kenji Sawada, & Seiichi Shin, "Security Enhancements of Networked Control Systems Using RSA Public-Key Cryptosystem", 978-1-4799-7862-5/15©2015 IEEE.
20. Yasmin Alkady, Mohmed I. Habib, Rawya Y. Rizk," A New Security Protocol Using Hybrid Cryptography Algorithms", 978-1-4799-3370-9/13©2013 IEEE.
21. Pravin Raj .S, A.Pravin Renold," An Enhanced Elliptic Curve Algorithm for Secured Data Transmission In Wireless Sensor Network", Proceedings of 2015 Global Conference on Communication Technologies(GCCT 2015), 978-1-4799-8553-1/15© 2015 IEEE.
22. H. Rahul, N. Kushman, D. Katabi, C. Sodini, and F. Edalat. Learning to Share: Narrowband-Friendly Wideband Wireless Networks. In SIGCOMM, 2008.
23. FCC press release, FCC Adopts Rules for Unlicensed Use of Television White Spaces. November 2008.

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