December 1, 2010

Dear Reappointment Committee Members

Please find attached supporting documents for my application for reappointment as Editor-in-Chief of IEEE Transactions on Dependable & Secure Computing effective January 2012. These comprise a letter of support from the Dean of my College, a brief plan for the publication’s future and complete curriculum vitae. I will be happy to provide any additional information that may be appropriate.

Sincerely,

Ravi Sandhu,
Executive Director, Institute for Cyber Security
Lutcher Brown Endowed Chair in Cyber Security
Professor of Computer Science
November 9, 2010

EIC Reappointment Committee  
IEEE Transactions on Dependable and Secure Computing

To The Reappointment Committee:

The College of Sciences at the University of Texas at San Antonio is very pleased that Dr. Ravi Sandhu of the Computer Science Department in our College is reapplying for the position of Editor-in-Chief for IEEE Transactions on Dependable and Secure Computing. The College of Sciences continues to strongly support his candidacy, and I have personally encouraged him to reapply for this prestigious and important position. Researchers in the discipline need no introduction to Dr. Sandhu, and I will let his vita and statement speak for themselves.

The main purpose of my letter is to express the support of the College should Dr. Sandhu be selected to serve another term as Editor-In-Chief. Dr. Sandhu has sufficient office, administrative and research space to undertake this task. Further, I know well his ability to organize staff to accomplish scholarly goals. Dr. Sandhu has established a world-class institute at UTSA involving our students and faculty, as well as recruiting new talent.

I am confident that Dr. Sandhu will continue to provide exceptional service in this position and further enhance the excellent reputation of the IEEE Transactions on Dependable and Secure Computing.

Sincerely,

George Perry, Ph.D.
Vision Statement and Plan for IEEE TDSC

Ravi Sandhu

This statement is in support of my reappointment as EIC of IEEE TDSC for a second term. My first term began in January 2010 so I have been in office for just under a year. It would be a privilege and honor to be reappointed to a second term. My management at UTSA is totally supportive and has strongly encouraged my application for reappointment.

State of the Transactions

In its 7th year of operation TDSC has established a strong reputation in the dependability and security communities. TDSC receives a steady stream of submissions from leading established researchers in the field as well as new upcoming researchers. The editorial board continues to attract participation from established researchers. There are more deserving volunteers than we can accommodate on the board. TDSC will be an OnLine Plus Transactions effective January 2011, in the first cohort of Computer Society Transactions to make this move. It will also transition at the same time to a bi-monthly schedule from its current quarterly frequency. One of the unique strengths of TDSC is that it was created with a vision of bringing together two distinct communities, dependability and security. As we look ahead these two disciplines are only going to get more intertwined.

Fundamental Challenges

In general TDSC faces the same fundamental challenges as other Computer Science Journals. The biggest challenge continues to be the relevance of Journals versus Conferences. My position on this is summarized by the following quote from my incoming EIC editorial in the January 2010 TDSC issue.

“Ultimately each researcher must determine the best mix of conference and journal papers appropriate for the kind of research they do. For many researchers, the abbreviated conference paper format and abbreviated conference reviewing cycle are simply inadequate for publication of well-thought-out and well-developed lines of research. I am firmly convinced that carefully refereed papers are the hallmark of a mature profession.”

My personal conviction is that journals will evolve in an increasingly online world but they will remain vital to the scientific enterprise with respect to high quality archival research.

Operational Challenges

I believe the biggest operational challenge for TDSC is to resolve the two major pain points for our authors. Both relate to lead times. The first is lead time from submission to decision. The second is lead time from acceptance to publication. For convenience, I will refer to the first as decision lead time and to the second as publication lead time. The decision lead time is under control of the EIC and the Editorial Board, much more so than the publication lead time. Dependability and Security is a high growth area. It is imperative that TDSC, and through it the IEEE Computer Society, be a leading forum for journal publication in this arena. Managing these lead times is essential to this goal.
Addressing the Challenges

In the following I will elaborate on the concrete steps I would like to pursue during my tenure as EIC to address the relevance challenge, and the decision and publication lead time challenges.

- During my term as EIC I would like to establish TDSC as a model Transactions in terms of decision lead time. It is important that the EIC be a good role model in taking care of editor assignments and decisions in a timely manner. It is also important for the EIC to intervene when decisions are taking too long. The EIC needs to be aware of which papers have lingered in the decision process too long or are on the verge of doing so. When I started my tenure in January 2010 there were a number of problem papers in the pipeline including several assigned to editors whose terms had officially ended. It has taken me a while to get these under control. Looking ahead I would like to proactively catch potential problem papers before they actually become so. Another important requirement is to have balance in load assigned to editors. The current TDSC editorial board is somewhat misaligned in their skill set with respect to the submission pipeline. This makes it hard to balance the load. Over the next couple of years I plan to better align the two. Finally continued poor performance by an editor should not be tolerated indefinitely. Fortunately, there seem to be only one or two problem editors at any time. I plan to weed out problem editors expeditiously in the rare cases where this is merited. This is an unpleasant but important task for an EIC.

- In terms of publication lead time I would like to grow TDSC into a monthly publication. Dependability and Security is a high growth field. In fact security papers appear in almost all the IEEE Computer Society Transactions. This diffusion is good for the field. Nonetheless TDSC should be the major venue and should grow to a monthly schedule in line with growth in the field. I will work with the IEEE Computer Society Transactions staff to better understand the reasons for the current publication lead time and perhaps make some suggestions to improve the current situation. Note that simply going to an OnLine model does not automatically eliminate publication lead time. Editing and final formatting are still required. In the steady state it should be possible to balance acceptance rate with publication rate. I will investigate what it might take to get these rates into balance with a onetime effort to clear out the publication backlog.

- Finally, I would like to grow the Special Issues/Special Sections aspect of TDSC. We have issued a call on our web site soliciting proposals for special theme issues. These theme issues put out an open call for papers as well as look to relevant conferences from where selected papers may be invited (subject to new content requirements). Proposals have started trickling in, and we anticipate growing interest from the community. At the moment the proposals are vetted by the EIC and the two Associate EICs. Over time we may dedicate an Associate EIC for Special Issues and further formalize the process to accept proposals. Before my tenure TDSC had a few Special Issues based on individual conferences. I believe the Special Theme issues are a better model for TDSC. In general Special Issues will help with reducing decision and publication lead times, at least for Special Issue papers. They will also engage a larger body of volunteers.

In conclusion I reiterate my enthusiasm and commitment to serving a second term as IEEE TDSC EIC.
Professor Ravi Sandhu  
University of Texas at San Antonio  
Executive Director and Founder, Institute for Cyber Security  
Lutcher Brown Endowed Chair in Cyber Security  
Professor of Computer Science (College of Science)  
Professor of ECE (College of Engg.) and ISTM (College of Bus.), Courtesy Appointments  
Also Chief Scientist and Co-Founder, TriCipher

Contact  
Inst. for Cyber Security, One UTSA Circle BSE 2.304, U. of Texas-San Antonio, San Antonio, TX 78249  
Voice : 210 458 6081, Cell: 210 845 3410, Email: ravi.sandhu@utsa.edu, URL: www.profsandhu.com

Degrees  
<table>
<thead>
<tr>
<th>Degree</th>
<th>Major</th>
<th>University</th>
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<tbody>
<tr>
<td>Ph.D.</td>
<td>Computer Science</td>
<td>Rutgers University, New Jersey</td>
<td>1983</td>
</tr>
<tr>
<td>M.S.</td>
<td>Computer Science</td>
<td>Rutgers University, New Jersey</td>
<td>1980</td>
</tr>
<tr>
<td>B.Tech.</td>
<td>Electrical Engineering</td>
<td>Indian Institute of Technology, Bombay</td>
<td>1974</td>
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Academic Career
- **Univ. of Texas at San Antonio**, 2007 onwards: Full Prof. and Endowed Chair (Cyber Security).

Career Focus and Goals
My career has focused on high impact research, practice and education in cyber security starting with my doctoral thesis. Effective cyber security requires science, engineering, business, policy and people skills. My goal is to instill this culture in the cyber-security discipline and provide leadership in all elements.

Professional Recognition
- **Citations and Impact.** (Based on Google Scholar) 13,000+ citations. #1 paper in access control with 4000+. My h-index is 54 (54 papers with 54 or more citations).
- **AAAS Fellow, 2008.** “For distinguished contributions to cyber security, including seminal role-based access control and usage control models, and for professional leadership in research journals and conferences.”
- **ACM SIGSAC Outstanding Contribution Award, 2008.**
- **IEEE Computer Society Technical Achievement Award, 2004.** “For outstanding and pioneering contributions to information security including innovation of the RBAC model and usage control.”
- **IEEE Fellow 2002.** “For contributions to the field of information and system security.”
- **ACM Fellow 2001.** “For technical contributions to the field of info. and system security, notably access control models and systems, and professional leadership in research journals and conferences.”

Highly Cited Papers at Google Scholar Include  
Role-Based Access Control
- The NIST Model for Role-Based Access Control. 5th ACM RBAC:47-63, 2000. 500+ hits.
- The ARBAC97 Model for Role-Based Admin. of Roles. ACM TISSEC, 2(1):105-135, 1999. 400+ hits.
- Numerous others with 100+ hits.
Usage Control

Access Control Tutorials

Access Control Earlier Models
- Task-based Authorization Controls. 11th IFIP 11.3 Data and Application Sec.:262-275, 1997. 300+ hits.

Research Highlights
- Statistics: 190+ papers (with 65+ co-authors), 17 USA patents, 16 PhD graduates, 35+ research grants.
- Sponsors: include NSF, NSA, NRO, NRL, AFOSR, NIST, DARPA, ARDA, AFOSR, Sandia, State Dept., DOE, IRS, RADC, FAA, Intel, Northrop Grumman, Lockheed Martin, ITT, Verizon.
- Ongoing research initiatives include: Security-enabled information sharing, Social media security, High assurance security, Malware mitigation, Cloud security.
- Earlier research: My research on RBAC has been instrumental in establishing it as the preferred form of access control, including its acceptance as an ANSI/NIST standard in 2004. My earlier research on numerous access control models remains influential and state-of-the-art.

Professional Leadership Includes
- Editor-in-Chief, IEEE Transactions on Dependable and Secure Computing (TDSC), 2010 onwards.
- Founding General Chair, ACM Conf. on Data and Applications Security and Privacy (CODASPY), 2011
- Conference General Chair: IEEE: CSF (93, 94), ACM: CCS (96), SACMAT (01, 02), CODASPY (11)

Entrepreneurial and Consulting Career
- TriCipher Inc., 2000 onwards, Chief Scientist and Co-Founder
- Consultant to numerous organizations including: McAfee, Trusted Information Systems, National Institute of Standards and Technology, Verizon, SETA Corporation, Argonne National Laboratory, Singapore Management University, Northrop Grumman, Integris Health.

Teaching Career
- I was the principal architect for the MS and PhD in Information Security and Assurance at George Mason University, where I personally developed and taught the core courses and multiple electives.
- I have presented short courses, tutorials and invited lectures all over the world including Asia, Australia, Europe, North America and South America.

Personal

June 2010
Sponsored Research Grants

Currently Active

1. IAPD: A Framework for Integrated Adaptive and Proactive Defenses against Stealthy Botnets
   Principal Investigators: Shouhuai Xu and Ravi Sandhu
   Partners: Georgia Tech

2. AISL: Assured Information Sharing Life Cycle
   Principal Investigator: Ravi Sandhu
   Sponsor: Air Force Office of Scientific Research, MURI, 2008-2013

3. SNGuard: Securing Dynamic Online Social Networks
   Principal Investigator: Ravi Sandhu
   Sponsor: National Science Foundation, 2008-2012
   Partners: Penn. State Univ., Arizona State Univ., Univ. of North Carolina-Charlotte

4. Institute for Cyber Security Founding Grant
   Principal Investigator: Ravi Sandhu
   Sponsor: State of Texas Emerging Technology Fund, 2007-2011

5. STARS Grant for Establishing Institute for Cyber Security Laboratory
   Principal Investigator: Ravi Sandhu
   Sponsor: University of Texas System, 2007-2010

Completed

6. A Systematic Defensive Framework for Combating Botnets
   Principal Investigator: Ravi Sandhu
   Sponsor: Office of Naval Research, 2009
   Partners: Purdue U., UT Dallas, Texas A&M, U. of Wisconsin

7. Secure Knowledge Management: Models and Mechanisms
   Principal Investigator: Ravi Sandhu
   Sponsor: National Science Foundation, 2005-2009

8. Deploying Secure Distributed Systems using LaGrande Technology: Models, Architectures and
   Protocols
   Principal Investigator: Ravi Sandhu

9. Information Operations Across Infospheres
   Principal Investigator: Ravi Sandhu
   Partner: UT Dallas

10. Usage Control Models, Architectures and Mechanisms Based on Integrating Authorizations,
    Obligations and Conditions
    Principal Investigator: Ravi Sandhu
    Sponsor: National Science Foundation, 2003-2006

11. Next Generation Authentication and Access Control for the FAA
12. **Flexible Policy Models and Architectures for Client and Server-assured Document Access Controls**  
   Principal Investigator: Roshan Thomas, McAfee Research, Network Associates  
   Investigator: Ravi Sandhu  
   Sponsor: *Advanced Research and Development Agency*, 2003-05

13. **Scalable Authorization in Distributed Systems**  
   Principal Investigator: Ravi Sandhu  
   Sponsor: *National Science Foundation*, 1999-2002

14. **Sonora: Secure Metadata Models and Architectures**  
   Principal Investigator: Ravi Sandhu  
   Co-Investigator: Larry Kerschberg  
   Sponsor: *Northrop Grumman*, 2001-2002

15. **Secure Objects**  
   Principal Investigator: Ravi Sandhu  
   Co-Investigators: Larry Kerschberg and Edgar Sibley  

16. **Security and Containment Policy for the Attack Sensing, Warning and Response Laboratory**  
   Principal Investigator: Ravi Sandhu  

17. **Secure Role-Based Workflow Systems**  
   Principal Investigator: Ravi Sandhu  
   Sponsor: *Naval Research Laboratory*, 1999

18. **Control and Tracking of Information Dissemination**  
   Principal Investigator: Ravi Sandhu  
   Sponsor: *Lockheed Martin*, 1999

19. **Distributed Role-Based Access Control Models and Architectures**  
   Principal Investigator: Ravi Sandhu  
   Sponsor: *Sandia National Laboratories*, 1999

20. **Role-Based Access Control on the Web**  
   Principal Investigator: Ravi Sandhu  

21. **Secure Remote Access**  
   Principal Investigator: Ravi Sandhu  

22. **Agent-Based Systems**  
   Principal Investigators: Ravi Sandhu, Prasanta Bose, Elizabeth White  

23. **Multi-Layered Countermeasures to Vulnerabilities in Networked Systems**  
   Principal Investigator: Ravi Sandhu  

24. **Role-Based Access Control: Phase II**  
   Principal Investigator: Ed Coyne, SETA Corporation
Investigators: Ravi Sandhu, Charles Youman (SETA)  
Sponsor: National Institute of Standards and Technology, 1995-97

25. Task-based Authorizations: A New Paradigm for Access Control  
Principal Investigator: Roshan Thomas, Odyssey Research Associates  
Investigator: Ravi Sandhu  

26. A Pragmatic Approach to the Design and Analysis of Composite Secure Systems  
Principal Investigator: Ravi Sandhu  

27. Design of Multilevel Secure Relational Databases  
Principal Investigator: Ravi Sandhu  

28. Role-Based Access Control: Phase I  
Principal Investigator: Hal Feinstein, SETA Corporation  
Investigators: Ravi Sandhu, Ed Coyne (SETA), Charles Youman (SETA)  
Sponsor: National Institute of Standards and Technology, 1994

29. Architectures for Type-Based Distributed Access Control  
Principal Investigator: Ravi Sandhu  

30. Privacy Models and Policies  
Principal Investigator: Andrew Sage, George Mason University  
Investigators: Ravi Sandhu, Sushil Jajodia and Paul Lehner  
Sponsor: Internal Revenue Service, Tax Systems Modernization Institute, 1995

31. Derivation, Modeling, and Analysis of Access Control Systems  
Principal Investigators: Ravi Sandhu and Paul Ammann  
Sponsor: National Science Foundation, 1992-95

32. Unified Security Models for Confidentiality and Integrity  
Principal Investigator: Ravi Sandhu  

33. Foundations of Multilevel Secure Object-Oriented Databases  
Principal Investigator: Ravi Sandhu  

34. Polyninstantiation in Multilevel Relations  
Principal Investigator: Sushil Jajodia  
Co-Principal Investigator: Ravi Sandhu  
Sponsor: Rome Air Development Center, Department of Defense, 1992

35. Models, Mechanisms and Methods for Integrity Policies  
Principal Investigator: Ravi Sandhu  

36. Analysis of Updates of Multilevel Relations  
Principal Investigator: Sushil Jajodia  
Co-Principal Investigator: Ravi Sandhu  
Sponsor: Rome Air Development Center, Department of Defense, 1990-91
PhD Advisees

1. Ram Krishnan, Group-Centric Secure Information Sharing Models, Fall 2009. (Co-advisor: Daniel Menasce.)
2. David A. Wheeler, Fully Countering Trusting Trust through Diverse Double-Compiling, Fall 2009. (Co-advisor: Daniel Menasce.)
3. Venkata Bhamidipati, Architectures and Models for Administration of User-Role Assignment in Role Based Access Control, Fall 2008. (Co-advisor: Daniel Menasce.)
4. Zhixiong Zhang, Scalable Role and Organization Based Access Control and Its Administration, GMU, Spring 2008. (Co-advisor: Daniel Menasce.)
5. Xinwen Zhang, Formal Model and Analysis of Usage Control, GMU, Summer 2006. (Co-advisor: Francesco Parisi-Presicce.)
14. Tarik Himdi, A Scalable Extended DGSA Scheme for Confidential Data Sharing in Multi-Domain Organizations, GMU, Spring 1998.
USA Patents


PUBLICATIONS

Journal Publications


**Publications in Collections**


Conference Publications


140. Jeremy Epstein and Ravi Sandhu, “NetWare 4 as an Example of Role Based Access Control.” *Proc. First ACM Workshop on Role-Based Access Control*, Gaithersburg, Maryland, November 30-December 1, 1995, pages II.71-82.


END