

# Biography

## 1. Job History

Dr. Norio SHIRATORI, born in Miyagi, Japan on May 11, 1946, received the B.E degree from Tokai University, Japan in 1972, and the M.E and Ph.D. degree in engineering from Tohoku University, Japan in 1974 and 1977, respectively. In the same year, he joined the Research Institute of Electrical Communication (RIEC), Tohoku University as Assistant Professor (Apr.1977 to Oct.1984). In 1984, he became Associate Professor, RIEC (Nov.1984 to June 1990), and Professor, School of Information Engineering, Tohoku University in 1990(Apr.1990-Mar.1993). In 1993, he returned to RIEC as Professor (Apr.1993-Mar.2010). After he retired from Tohoku University in 2010, he has been an Emeritus Professor of Tohoku University. He was also a Visiting Professor of Tohoku University (2010-2015), and an Executive Board Member of Future University Hakodate (2010-2014), Japan. In 2012, he moved to the GITS (Graduate School of Global Information and Telecommunication Studies), Waseda University (2012-2015), Japan.

Currently, he is Professor of Chuo University, Japan (Apr. 2014-Present), Visiting Professor of the GITI (Graduate Information and Telecommunication Institute), Waseda University (2015-present).

As additional positions, he served as a Visiting Professor, UCLA (University of California, Los Angeles), U.S.A. (July 1997-Aug.1997), and RDI Professor / Visiting Researcher, Research and Development Initiative (RDI), Chuo University (Apr.2011-Mar.2012), and Research Fellow of NICT (National Institute of Information and Communications Technology) Resilient ICT Research Center, Japan.

## 2. Academic Societies

Dr. Shiratori is fellows of the IEEE (Institute of Electrical and Electronic Engineers), the JFES (The Japan Foundation of Engineering Societies), the IPSJ (Information Processing Society of Japan), and the IEICE (The Institute of Electronics, Information and Communication Engineers). He is the former President of the IPSJ (2009-2011), Chair of the IEEE Sendai Section (2010-2011) and Vice Chair of the IEEE Japan Council (2013-2014). He also served as a Japanese representative of the IFIP (International Federation for Information Processing, 2004-2005) and a member of the Science Council of Japan (Aug. 2006- Sept. 2011).

## 3. Education

As a supervisor, Dr. Shiratori has graduated 63 PhD students and 115 of MS students at Tohoku University for 20 years. The numbers of the PhD graduates are at the top-level among graduate schools of information fields. He has published over 600 refereed research papers and more than 15 technical books in computer science and its related fields.

## 4. International Conferences

He has also served various capacities in international conferences such as Honorary Chairs (10 times), General Chairs (5 times), and Program Chairs (3 times); (1) Honorary Chairs of 1) NaNA2016, Hakodate, Japan, 2) UIC2015, Beijing, 3) ICCSA 2014,

Guimaraes, 4) ICCSA 2011, Santander, Spain, and 5) UIC-06, Three Gorges, China (2006), (2) General Chairs of 1) 9th IEEE ICOIN-9 (1994, Osaka, Japan), 2) IFIP Joint International Conference FORTE/PSTV'97 and 12th IEEE ICOIN-12, Taipei, Taiwan (1997), (3) Program Chairs of 1) ICPADS'96 (1996), Tokyo, 2) ICPP-99, Aizu, Japan (1999) and many others.

## **5. International Standards**

He has achieved 2 International Standardizations on Network Mobility at IETF (Internet Engineering Task Force) ; 1) RFC 4295 Mobile IPv6 Management Information Base (Apr., 2006) and 2) RFC 5488 Network Mobility (NEMO) Management Information Base (Apr., 2009) . The RFC 4295 and 5488 were based on the outcome of the following 2 governmental projects, 6-(6) and 6-(7) respectively.

## **6. Proposal of 4 Scientific Concepts and Promotion of Governmental Projects**

Dr. Shiratori has proposed the following 4 new scientific concepts; (1) Knowledge-based Design Methodology, (2) Flexible Computing, (3) Symbiotic Computing, and (4) Never Die Networks. Based on the 4 concepts, he has led 9 governmental projects. His representative projects are listed in 6.1 and his 4 concepts are written in 6.2.

### **6.1 Promotion of Governmental Projects**

#### **(1) Never Die Networks Project**

- 1) Project Title: JSPS Grants-in-Aid for Scientific Research (A)  
“Never Die Networks : Green-oriented Never Die Networks which Adopt to Disaster and Maximize Satisfaction level of Network Connectivity of Great Number of People”
- 2) Periods: 2014-2017
- 3) Budget: 45 million yen
- 4) Sponsor: JSPS (Japan Society for the Promotion of Science), MEXT(Ministry of Education, Culture, Sports, Science and Technology)

#### **(2) Symbiotic Computing Project (1)**

- 1) Project Title: MIC ICT Project  
“Kurihara Green Project : Demonstration Experiment in a Wide-area Distributed Community to Establish an ICT System towards a Creation of a Symbiosis between Human's Life and Nature”
- 2) Periods: 2010-2011
- 3) Budget: Approx. 260 million yen
- 4) Sponsor: MIC (Ministry of Internal Affairs and Communications)

#### **(3) Symbiotic Computing Project (2)**

- 1) Project Title : MIC PREDICT (Promotion program for Reducing global Environmental load through ICT innovation )  
“Green Koban : Development of Next Generation Green-

oriented Network Management System to Realize Energy Savings of Network Management Systems “

- 2) Periods: 2011-2014
- 3) Budget: Approx.170 million yen
- 4) Sponsor: MIC (Ministry of Internal Affairs and Communications)

**(4) Flexible Networks Project (1)**

- 1) Project Title: IPA Project for Creative Software Development  
“ADIPS : e-Support Environment in Promoting Generation of Flexible Ideas for Education and Meetings”
- 2) Periods: 1996-1998
- 3) Budget: 320 million yen
- 4) Sponsor: MITI (Ministry of International Trade and Industry)

**(5) Flexible Networks Project (2)**

- 1) Project Title: JSPS Research for the Future Program  
“ Flexible Network Architecture : Dynamic Networking”
- 2) Periods: 1999-2003
- 3) Budget: Approx.700 million yen
- 4) Sponsor: JSPS (Japan Society for the Promotion of Science), MEXT(Ministry of Education, Culture, Sports, Science and Technology)

**(6) Flexible Networks Project (3)**

- 1) Project Title : MIC SCOPE  
“Mobile IPv6 : Research and development on a framework for monitoring next generation ubiquitous networks”,
- 2) Periods : 2003-2005
- 3)
- 4) Budgets : Approx. 40 million yen
- 5) Sponsor : MIC (Ministry of Internal Affairs and Communications)

**(7) Flexible Networks Project (4)**

- 1) Project Title: MIC SCOPE  
“NEMO : Research and Development on a Framework for Monitoring Next Generation Ubiquitous Networks to Support NEMO(Network Mobility)”
- 2) Periods : 2007-2010
- 3) Budgets : Approx. 40 million yen
- 4) Sponsor : MIC (Ministry of Internal Affairs and Communications)

**6.2 Proposal of 4 Scientific Concepts**

Dr. Shiratori has been working in the field of information and communications. Specifically, he has pursued 4 areas of research: 1) a knowledge-based design and development support system for information communication systems, 2)

Flexible Networks, 3) Symbiotic Computing aimed at achieving harmony between people and computers and a symbiotic relationship between humans and the nature, and 4) the ‘Never Die Networks.’ He has been a trailblazer in all of these areas.

### **(1) Knowledge-based Design Method**

He proposed a knowledge-based design method, which integrates communication with artificial intelligence, and proved the feasibility of supporting the entire scope of the design process, from protocols to application services on an information network. Three papers describing the results of this work were accepted and were among the 15 papers published in “Special Issue: AI in Communication Network,” of IEEE JSAC. These received high worldwide acclaim for being at the forefront of their respective technical areas.

### **(2) Flexible Networks**

In 1994, he proposed the concept of a “Flexible Network” that can dynamically adapt to changes that occur both inside and outside of a network. He succeeded in implementing a flexible network by introducing a “flexible network layer” into the existing network architecture. Later, this flexible network layer came to be called network middleware, and is now firmly established and widely implemented worldwide.

### **(3) Symbiotic Computing**

In the early 1990s, he proposed the concept of Symbiotic Computing, and led researches on “green-oriented” information communication systems that are aimed at achieving symbiosis between humans and the nature and at saving energy. In 2011, he successfully conducted demonstration experiments in a project involving a wide-area distributed community (Kurihara Green Project, the Ministry of Internal Affairs and Communications).

### **(4) Never Die Networks**

In 2003, he proposed the concept of a “Never Die Networks” He has been pursuing trailblazing research on disaster-resistant information communication systems. This research has intensified since the East Japan Earthquake Disaster on March 11, 2011. His original and farsighted researches have been highly commended both nationally and internationally.

## **7. Awards**

Dr. Shiratori is a recipient of numerous awards for his longtime contributions and dedications to researches. For example, he received 1) the “Science and Technology Award (Research Division)” by MEXT(Ministry of Education, Culture, Sports, Science and Technology-Japan) (2009), 2) the “Telecommunication Advancement Foundation Incorporation Award”(1991), 3) “IEICE Achievement Award” (2001) , 4) “IEICE Contribution Award”(2011), 5) IPSJ Contribution Award(2008), 6) IEICE Honorary Member(2012), 7) IPSJ Honorary Member (2013), 8) “IPSJ Memorial Prize Winning Paper Award”(1985), 9) the “IPSJ Best Paper Award”(1997), and 10) “IEICE Best Paper Award“(2001),.

In international conferences, he received the 1) “Best Paper Award of IEEE ICOIN-

9” (1994), 2) “Best Paper Award of IEEE 5th SCE01 (World Multi-conference on Systemic, Cybernetics and Informatics)” (2001), 3) “Outstanding Paper Award of UIC-07” (2007), 4) “Best Paper Award, IEEE ICPADS 2000” (7th International Conference on Parallel and Distributed Systems), and many others.