

Industrial & Systems Engineering Department
10 Kent Ridge Crescent, Singapore 119260
Tel: (65) 6874-2203 Fax: (65) 6777-1434



SEMINAR
on

Architecture Based Systems Design and Integration

Speaker: Professor Andrew P. Sage, George Mason University, USA

Date: 11 June, 2004 (Friday)

Time: 11:00 a.m. – 12:00 noon.

Venue: EA-06-02, Faculty of Engineering, NUS

Abstract: This talk discusses systems integration and associated architecting as central issues in systems engineering. Several conceptual models for systems engineering and management are discussed and the essential need for systems integration is highlighted. Successful systems integration must be approached at the level of technology, humans, and organizations. To accomplish this, it is very important to identify and use an appropriate architectural framework and contemporary work concerning architectural frameworks is discussed. Most contemporary large system issues can not be approached from a monolithic perspective. Rather, we must consider system of systems and federation of systems issues. The essential characteristics of these systems are discussed and it is observed that properties of evolution, emergence and adaptation are inherently associated with systems architecting, design, and integration. These provide daunting challenges for systems engineering and management in the 21st Century.

About the Speaker: Professor Sage received the BSEE degree from the Citadel, the SMEE degree from MIT and the Ph.D. from Purdue, the latter in 1960. He received honorary Doctor of Engineering degrees from the University of Waterloo in 1987 and from Dalhousie University in 1997. He has been a faculty member at several universities including holding a named professorship and being the first chair of the Systems Engineering Department at the University of Virginia. In 1984 he became First American Bank Professor of Information Technology and Engineering at George Mason University and the first Dean of the School of Information Technology and Engineering. In May 1996, he was elected as *Founding Dean Emeritus* of the School and also was appointed a University Professor. He is an elected Fellow of the Institute of Electrical and Electronics

Engineers, the American Association for the Advancement of Science, and the International Council on Systems Engineering. He is editor of the John Wiley textbook series on *Systems Engineering and Management*, the INCOSE Wiley journal *Systems Engineering* and is coeditor of *Information, Knowledge, and Systems Management*. He edited the *IEEE Transactions on Systems, Man, and Cybernetics* from January 1972 through December 1998, and also served a two year period as President of the IEEE SMC Society. In 1994 he received the Donald G. Fink Prize from the IEEE, and a Superior Public Service Award for his service on the CNA Corporation Board of Trustees from the US Secretary of the Navy. In 2000, he received the Simon Ramo Medal from the IEEE in recognition of his contributions to systems engineering and an IEEE Third Millennium Medal. In 2002, he received an *Eta Kappa Nu* Eminent Membership Award and the INCOSE Pioneer Award. He was elected to the National Academy of Engineering in 2004 for contributions to the theory and practice of systems engineering and systems management. His interests include systems engineering and management efforts in a variety of application areas including systems integration and architecting, reengineering, engineering economic systems, and sustainable development.

Information: email: iseowlc@nus.edu.sg
Fax: 6777-1434