



IEEE Presents:

What Every Comm Engineer Should Know About Digital Communications

Dr. Bernie Sklar

Tuesday, 03 November 2009

11:30 a.m. – 11:45 a.m. Pizza & Networking

11:45 a.m. – 1:15 p.m. Lecture

**LECTURE HAS REACHED MAXIMUM CAPACITY –
NO LONGER TAKING RSVP'S**

No charge, non-members welcome

The Aerospace Corporation, Building: D8, Room: 1010

200 N. Aviation Ave, El Segundo, CA 90245

Chairs: Charles Wang, The Aerospace Corporation and Ron Smith, Northrop Grumman

RSVP by 27 October to Ms. Janice Penland, via email Janice.D.Penland@aero.org

Please identify your citizenship. IEEE membership (non-members welcome). and affiliation when you RSVP

Abstract

This whirlwind talk endeavors to reinforce the important operations and concepts in digital communications. We deal with signal types, degradation types, fading channels, parameters such as time-bandwidth product, and how we use them. Did Nyquist teach us anything important about pulse shaping? You bet. What did Shannon teach us about capacity and ultimate performance? We show how to make design choices for meeting difficult system requirements. We additionally describe some of the creative developments such as Turbo, LDPC, and MIMO that have transformed this technology from the simple to the sublime. This intense hour-and-a-half talk is geared toward designers, managers, software developers, and whoever wants to partake in the passion that drives communication engineers.

Biography



Dr. Bernard Sklar has over 50 years of technical experience at the following companies: Republic Aviation, Hughes Aircraft, Litton Industries, and The Aerospace Corporation. At Aerospace, he helped develop the MILSTAR satellite system, and was the principal architect for EHF Satellite Data Link Standards. Currently, he is the Director of Advanced Systems at Communications Engineering Services, a consulting company he founded in 1984. He has taught engineering courses at several universities, including the University of California, Los Angeles and the University of Southern California. He is an External Examiner of Digital Communication Engineering at the University of Cape Town, South Africa, and has presented numerous training programs throughout the world.

Dr. Sklar has published and presented over 90 technical papers. He received the 1984 Prize Paper Award from the IEEE Communications Society for his series on digital communications, and he is the author of the book, *Digital Communications: Fundamentals and Applications*, 2nd Edition, Prentice Hall, 2001. His academic credentials include a B.S. degree in Math and Science from the University of Michigan, an M.S. degree in Electrical Engineering from the Polytechnic Institute of Brooklyn, New York, and a Ph.D. degree in engineering from the University of California, Los Angeles.

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1. Exit at El Segundo Blvd (La Cienega Blvd).
(Just past the I-105 interchange).
2. Turn left at bottom of ramp onto La Cienega.
3. At El Segundo Blvd., turn right.
4. Turn right at Aviation Blvd.
5. Enter gate for The Aerospace Corporation on right side of street.

From the northbound San Diego Freeway (Interstate 405):

1. Exit at El Segundo Blvd. (just before the I-105 interchange).
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3. Turn right at Aviation Blvd.
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From the westbound Century Freeway (Interstate 105):

1. Take southbound I-405 exit.
2. Stay in right lane.
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(exit is before ramp merges with I-405).
4. Turn left at bottom of ramp onto El Segundo Blvd.
6. Turn right at Aviation Blvd.
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