Errata

INTRODUCTION TO DIGITAL COMMUNICATIONS

by

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Page 20, Problem 1.4(b): The word "they" refers to U and V. A better wording is: If, in addition, X and Y have the same mean, are U and V uncorrelated?

Page 63, Problem 2.1(b): The only minus sign should be an equals sign; that is, the distribution for V is given by $P(V=mT/4) = 1/4$ for $m = 0, 1, 2,$ and 3.

Page 66, Problem 2.18: Parts (c) and (d) should be added.
(c) Are the two random processes uncorrelated?
(d) Are the two random processes independent?

Page 97, six lines from the bottom: An integral sign is missing in the equation for $R_Y(t, s)$. It should be a double integral.

Page 126, six lines from the top: The lower limit on the intergral for $R_{\hat{X}}(\tau)$ should be 0 rather than $-\infty$.

Page 149, three lines from the bottom: It should be stated that the random variable U is independent of the random variables A_n, $-\infty < n < \infty$.

Page 162, last line: The condition $-\infty < f < \infty$ should be omitted.

Page 163, second line of text: The condition $-\infty < f < \infty$ should be $-\infty < \delta < \infty$.

Page 170, last line: The sign between the two fractions on the right-hand side of the equation should be + rather than −.

Pages 290–291: A normalization factor is missing in the expressions for c_0, c_k, and d_k. The correct expressions for the coefficients are

$$c_0 = \frac{1}{T}\int_0^T s(t)\,\mathrm{d}t,\ c_k = \frac{2}{T}\int_0^T s(t)\cos(k\omega_0 t + \varphi)\,\mathrm{d}t,\ \text{and } d_k = \frac{2}{T}\int_0^T s(t)\sin(k\omega_0 t + \varphi)\,\mathrm{d}t.$$

Page 324, first displayed equation: In the first equation for the average probability of error, each numerical subscript is off by one. The subscripts should range from 0 to 3, not from 1 to 4. The subscripts are correct in the second displayed equation.

Page 362, two lines above the first displayed equation: M-ASK should be M-QASK

Page 377, six lines below equation (6.73): "for some signal constellations the bit error depends on" should be "for some signal constellations the bit error probability depends on" (the word "probability" is missing)

Page 407, Problem 6.11: The parameter list $d_0, d_1, \ldots, d_{M-1}$ should be $d_1, d_2, \ldots, d_{M-1}$.

Page 409, Problem 6.15: The first sentence should be "Consider the symbol error probabilities for regular QASK signal constellations with maximum-likelihood receivers."

Page 410, Problem 6.20(a): $3d$ should be $2d$

Page 473, Figure 7-15: The frequency ω_0 should be ω_1 in each of the bottom two correlators.

Page 506, Figure 8-4: The third pulse in the top graph should be labeled $\beta(t - 2T)$.

Page 538, Figure 8-28: $(\alpha = 1/2)$ should be $(\alpha = 0)$.

Page 544, last line: The word "the" is missing. It should say "where $1/T$ is the symbol rate for the communication signal."

Page 546, fourth line: The word "to" is missing. It should say "according to the equalizer's clock."

Page 547, next to last line: The word "the" is missing. It should say "and the desired signal component ...."

Page 609, between (9.37) and (9.38): "parmeters" should be "parameters"

Page 650, equation (C.31): The left-hand side of the first line should be $\tilde{x}(t)$ rather than $\tilde{z}(t)$.

Page 650, first sentence of last paragraph: "locally symmetry" should be "local symmetry"

Page 670, missing index entry: Phase-locked loop, 304–305, 405