Errata

The following changes should be made to the article "Performance Evaluation and Interpretation of Unfiltered Feher-Patented Quadrature-Phase-Shift Keying (FQPSK)," by M. K. Simon and T.-Y. Yan, that appeared in *The Telecommunications and Mission Operations Progress Report 42-137, January–March 1999* on May 15, 1999.

Equations (22a) and (22b) should be corrected to read as follows:

$$\left.\begin{aligned} S_0(t) &= A, \quad 0 \le t \le T_s \\ S_1(t) &= \begin{cases} A, & 0 \le t \le \dfrac{T_s}{2} \\ A\sin\dfrac{\pi t}{T_s}, & \dfrac{T_s}{2} \le t \le T_s \end{cases} \end{aligned}\right\} \tag{22a}$$

and

$$\left.\begin{aligned} S_2(t) &= 1-(1-A)\cos^2\frac{\pi t}{T_s}, \quad 0 \le t \le T_s \\ S_3(t) &= \begin{cases} 1-(1-A)\cos^2\dfrac{\pi t}{T_s}, & 0 \le t \le \dfrac{T_s}{2} \\ \sin\dfrac{\pi t}{T_s}, & \dfrac{T_s}{2} \le t \le T_s \end{cases} \\ S_4(t) &= \begin{cases} A\sin\dfrac{\pi t}{T_s}, & 0 \le t \le \dfrac{T_s}{2} \\ A, & \dfrac{T_s}{2} \le t \le T_s \end{cases} \\ S_5(t) &= A\sin\frac{\pi t}{T_s}, \quad 0 \le t \le T_s \\ S_6(t) &= \begin{cases} \sin\dfrac{\pi t}{T_s}, & 0 \le t \le \dfrac{T_s}{2} \\ 1-(1-A)\cos^2\dfrac{\pi t}{T_s}, & \dfrac{T_s}{2} \le t \le T_s \end{cases} \\ S_7(t) &= \sin\frac{\pi t}{T_s}, \quad 0 \le t \le T_s \end{aligned}\right\} \tag{22b}$$

Furthermore, the material starting with Eq. (30) and ending with Eq. (31) should be corrected to read as follows:

$$P_{si}(E) = \frac{1}{2}\text{erfc}\left(\sqrt{\frac{T_s}{N_0}\left(\frac{1}{T_s}\int_0^{T_s} S_i(t)\,dt\right)^2}\right) = \frac{1}{2}\text{erfc}\left(\sqrt{\left(\frac{32}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}\langle S_i(t)\rangle^2}\right) \tag{30}$$

where $\langle S_i(t)\rangle = (1/T_s)\int_0^{T_s} S_i(t)\,dt$ denotes the time average of $S_i(t)$. Evaluating these time averages from Eq. (22b), substituting each of them in Eq. (30), and then performing the average as in Eq. (29) gives the final desired result for average symbol-error probability, namely,

$$\begin{aligned} P_{si}(E) = {} & \frac{1}{16}\text{erfc}\left(\sqrt{\left(\frac{32A^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) + \frac{1}{8}\text{erfc}\left(\sqrt{\left(\frac{8A^2\left(1+\frac{2}{\pi}\right)^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) \\ & + \frac{1}{16}\text{erfc}\left(\sqrt{\left(\frac{8(1+A)^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) + \frac{1}{8}\text{erfc}\left(\sqrt{\left(\frac{2\left(1+\frac{4}{\pi}+A\right)^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) \\ & + \frac{1}{16}\text{erfc}\left(\sqrt{\left(\frac{32A^2\left(\frac{2}{\pi}\right)^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) + \frac{1}{16}\text{erfc}\left(\sqrt{\left(\frac{32\left(\frac{2}{\pi}\right)^2}{7+2A+15A^2}\right)\frac{\bar{E}_b}{N_0}}\right) \end{aligned} \tag{31}$$

It should be noted that, despite the typos in Eqs. (22a) and (22b) and errors in Eqs. (30) and (31), the numerical results reported for the average bit-error-probability performance of the conventional offset quadrature-phase-shift keyed (OQPSK) and averaged matched-filter receivers in the above-referenced article were obtained correctly. Thus, Fig. 13 of that article is correct as it stands.

Finally, the vertical axis of Fig. 5 should be labeled $s_6(t)$ instead of $s_1(t)$ and the left and right limits of the horizontal axis should be labeled $-\pi/2$ and $\pi/2$ instead of -1.00 and 1.00, respectively.