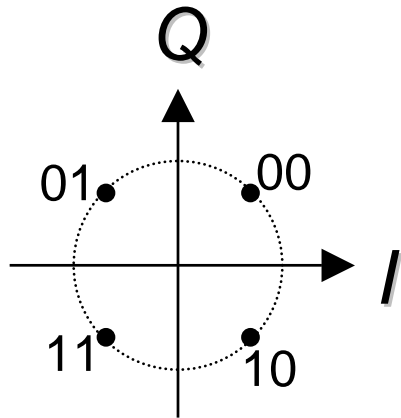
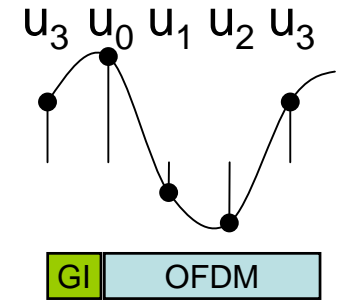
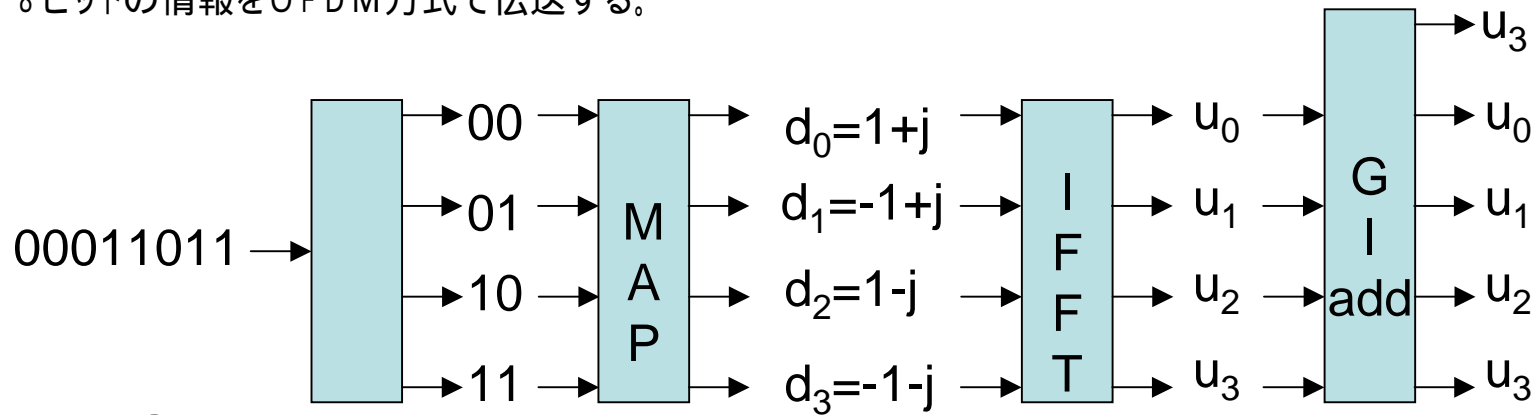


8ビットの情報をOFDM方式で伝送する。



$$u_k = \frac{1}{4} \sum_{n=0}^3 d_n \cdot \left(e^{j \frac{2\pi}{4} nk} \right)^{nk} = \text{IFFT} (d_n) \quad (k = 0,1,2,\dots,3)$$

$$u_0 = \frac{1}{4} (d_0 + d_1 + d_2 + d_3)$$

$$u_1 = \frac{1}{4} (d_0 + d_1 \cdot (j) + d_2 \cdot (-1) + d_3 \cdot (-j))$$

$$u_2 = \frac{1}{4} (d_0 + d_1 \cdot (-1) + d_2 + d_3 \cdot (-1))$$

$$u_3 = \frac{1}{4} (d_0 + d_1 \cdot (-j) + d_2 \cdot (-1) + d_3 \cdot (j))$$

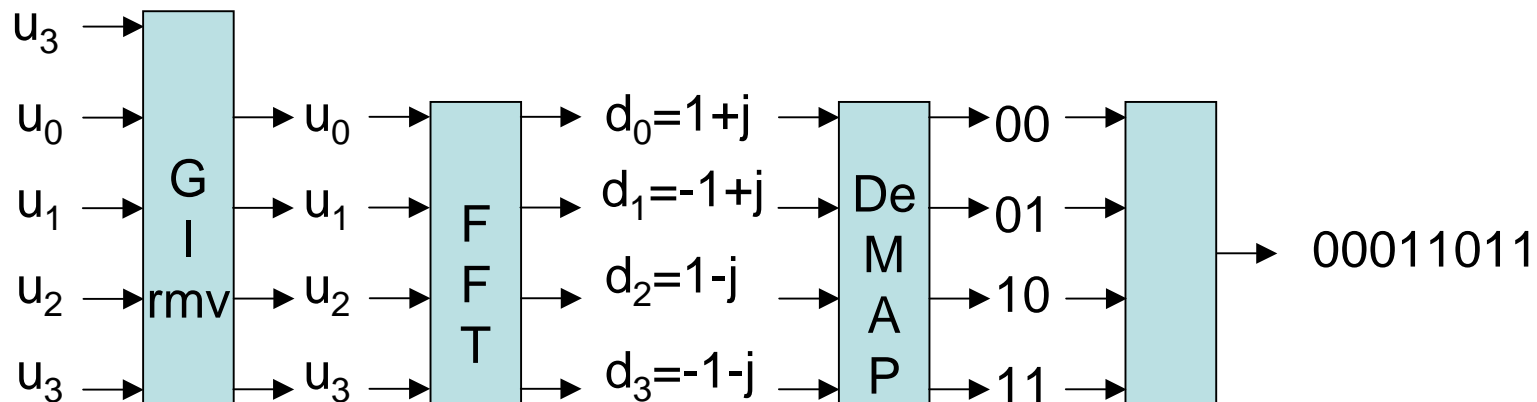
$$d_n = \sum_{k=0}^3 u_k \cdot \left(e^{-j \frac{2\pi}{4} nk} \right)^{nk} = \text{FFT} (u_k) \quad (n = 0,1,2,\dots,3)$$

$$d_0 = u_0 + u_1 + u_2 + u_3$$

$$d_1 = u_0 + u_1 \cdot (-j) + u_2 \cdot (-1) + u_3 \cdot (+j)$$

$$d_2 = u_0 + u_1 \cdot (-1) + u_2 + u_3 \cdot (-1)$$

$$d_3 = u_0 + u_1 \cdot (j) + u_2 \cdot (-1) + u_3 \cdot (-j)$$



HW-9

1. “10010011”の信号送信時の複素OFDM送信信号を示せ、ガードインターバルも含めよ！
2. “00000000”の信号送信時の複素OFDM送信信号を示せ、ガードインターバルも含めよ！
3. 上記2波形を比較して、実用上どのような問題があるか説明せよ！

