Page I	No.	
Dete		

1	DETAGLES	The second secon			
71	DETAILED	DERIVATION	OF	PERFORMANCE	NETOTO
					MOIRIC-I

- The Sensing Signal yi(m) at the SU in subchannel is given as follows:

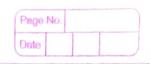
 $y^{\circ}(t) = \int g^{\circ}(t) \sqrt{q^{\circ} S^{\circ}(t) + \sqrt{\sigma_{i}^{\circ} S^{\circ}(t)}} dt$, $y^{\circ}(t) = \int g^{\circ}(t) \sqrt{1 + d^{\circ}(t)} dt$

Jog Silt), Ho

Acc to central Limit theorem

$$\frac{1}{\left(\frac{q_{i}^{2}}{1+a_{i}^{2}}\right)} \sim \left(\frac{q_{i}^{2}}{1+a_{i}^{2}}\right) + \sigma_{i}^{2} + \sigma_{i}^$$

$$N\left(\frac{\sigma_{i}}{M}\right), Ho$$



Fake Alarm Probability & Detection Probability are defined to measure the Spectrum Censing performance

Here The false Alarm Probability is given as to hows:

Probability of detection is given as:-

$$P_{a} = P_{r} \left(\overline{q}(y_{i}) > \beta \mid H_{1} \right) = Q \left(\frac{g}{q_{i} \left(\frac{g_{i}^{2}}{1+q_{i}^{2}} \right) + g_{i}} \right) \times X_{t_{s}}$$

from eqn (4) we can make I the subject to find its

$$g = G: \left(\frac{G^{-}(P_{+})}{\sqrt{z_{+}t_{3}}} + 1 \right)$$

We can substitute the value of I in eq 6 to tind

$$P_{d} = Q \left(\sigma_{i} \left(\frac{Q^{-1}(P_{f})}{\sqrt{G_{f}s}} + 1 \right) - 1 \right) \sqrt{G_{f}s}$$

$$Q_{i} \left(\frac{g_{i}^{2}}{1 + d_{i}^{-1}} \right) + \sigma_{i}$$