$\boxed{m_{1:2}}$ $(m_{1:1+1}, t=1)$ $u_2 = \text{true}$

$= \alpha\, P(\dot{e}_2|x_2) \max_{x_1} (P(x_2|x_1)\, m_{1:1})$

$= \alpha\, P(u_2|R_2) \max_{r_1} (P(R_2|r_1)\, m_{1:1})$

$r_1 = \text{true}$ using normalised values $m_{1:1}$

$= \alpha\, \langle 0.9, 0.2 \rangle \max_{r_1} (\langle 0.7\ 0.3 \rangle\, \langle 0.8182\ 0.1818 \rangle$

$\langle 0.3\ 0.7 \rangle\ \langle 0.8182\ 0.1818 \rangle\,)$

$r_1 = \sim r_1 (\text{false})$

compare

$= \alpha\, \langle 0.9, 0.2 \rangle \max_{r_1} (\underbrace{\langle 0.5727}\ 0.0545 \rangle\ \langle\underbrace{0.2454}\ 0.1272 \rangle)$

$= \alpha\, \langle 0.9, 0.2 \rangle\ \langle 0.5724\ 0.2454 \rangle$
                   rain $\sim$ rain

$= \alpha\ \langle 0.5154\ \ \ \ \ 0.0491 \rangle = \langle 0.9130\ \ 0.0870 \rangle$

$= \alpha\, \langle 0.9, 0.2 \rangle \max_{r_1} (\ \langle 0.7\ 0.3 \rangle\ \langle 0.315\ \ 0.07 \rangle$ (unnormalised values $m_{1:1}$)

$\langle 0.3\ 0.7 \rangle\ \langle 0.315, 0.07 \rangle\,)$

$= \alpha\, \langle 0.9, 0.2 \rangle \max_{r_1} (\langle\underbrace{0.2205}\ 0.021 \rangle,\ \langle\underbrace{0.0945}\ 0.049 \rangle)$

$= \alpha\ \langle 0.9, 0.2 \rangle\ \langle 0.2205\ \ \ 0.0945 \rangle$