Supplementary Material(jags syntax)

model{

 for(i in 1:N){

 for(j in 1:m){

 eta[i,j]<-exp(a[j]\*thtao[i,1]-bbeta[j,1])

 pA[i,j]<-eta[i,j]/(1+eta[i,j]) # the probability of latent response

 t0[i,j]<-(bbeta[j,2]-thtao[i,2])

 RT[i,j]~dnorm(t0[i,j],sigT[j]) #Response Time model

 z[i,j]<-(RT[i,j]-t0[i,j])\*siga[j]

 pT[i,j]<-(1-exp(-exp(alpha[j]\*z[i,j]+d)))# the influence of time on probability

 p[i,j]<-pA[i,j]\*pT[i,j] # SATM

 U[i,j]~dbern(p[i,j]) # Observation response

 }

 thtao[i,1:2]~dmnorm(muth[1:2],thcov[1:2,1:2])

 }

 for(j in 1:m){

 bbeta[j,1:2]~dmnorm(mubb[1:2],bbcov[1:2,1:2])

 a[j]~dnorm(0,1)T(0,)

 siga[j]~dnorm(0,1)T(0,)

 sigT[j]<-pow(siga[j],2)

 alpha[j]~dnorm(0,1)

 }

 muth[1]<-0

 muth[2]<-0

 Rth[1,1]<-1

 Rth[2,2]<-1

 Rth[1,2]~dnorm(0,1)T(-1,1)

 Rth[2,1]<-Rth[1,2]

 mubb[1]~dnorm(0.01,0.01)

 mubb[2]~dnorm(0.01,0.01)

 Rbb[1,1]<-1

 Rbb[2,2]<-1

 Rbb[1,2]<-0

 Rbb[2,1]<-0

 d~dnorm(0,1)T(0,)

 bbcov[1:2,1:2]~dwish(Rbb[1:2,1:2],2)

 sigbb[1:2,1:2]<-inverse(bbcov[1:2,1:2])

 thcov[1:2,1:2]<-inverse(Rth[1:2,1:2])

 }