# Part I

We can model this system with the tuple , where:





# Part II

As **init** is a composed state, we define it as the tuple  , where:





# Part III

As **monitoring** is a composed state, we define it as the tuple  , where:





# Part IV

As **lockdown** is a composed state, we define it as the tuple  , where





# Part V

As **error\_diagnosis** is a composed state, we define it as the tuple  , where



