Elevator Subsystem
Elevator 1 --> Fault State
Elevator 1 --> Active State
Elevator 1 --> Waiting State

FAULT DETECTED! Elevator didn't reach floor in time, shut down elevator and notify scheduler.

Elevator 2 --> Error State
Elevator 2 --> Active State
Elevator 2 --> Waiting State

When in this state, Elevator receives request and moves to respective floor

Notify scheduler that elevator has arrived to its floor

Elevator 3 --> Error State
Elevator 3 --> Active State
Elevator 3 --> Waiting State

Elevator 4 --> Error State
Elevator 4 --> Active State
Elevator 4 --> Waiting State

When in this state, Scheduler finds most efficient way to deploy elevator and alerts the elevator it deems most efficient

New request is added to queue and scheduler selects an elevator

Tells elevators to stop and notifys floor subsystem that floor has reached destination

Scheduler
Scheduler --> Sending State
Scheduler --> Receiving State

|<— 2.7s —>| |<— 2.2s —>|

|< 1.2s >|

Reschedule remaining jobs in elevator queue amongst remaining elevators based upon availability/convenience

Floor Subsystem
Floor Subsystem --> Sending State
Floor Subsystem --> Receiving State

When in this state, Floor Receives Request and Sends to Scheduler

Request is received by floor subsystem from different floor

PLEASE NOTE: The following timing diagram represents information flow between subsystems in both cases, which are:

- When an elevator receives a request and when performing said request, no fault is detected
- When an elevator receives a request and when preforming said request, a fault is detected