Two Server and Customer Types

A service facility has two types of servers, A and B. Two types of customers, I and II, arrive to the facility, each according to their own arrival process. An arriving customer of type I will prefer to get service from a server of type A, but if all type A servers are busy, will get service from a type B server, if one is available. If no servers are available, the type I customer waits in a separate queue from the type II customers. Likewise, an arriving customer of type II will get service from a server of type B, if available, and from a server of type A if no type B servers are available, waiting in the Type II queue if neither on is available.

A server of type A completing service on a customer of either type will prefer to serve a type I customer next. If no type I customers are waiting, the server will serve a type II customer, if any are waiting. Similarly, a type B server completing service will prefer to wait on a type II customer, but will serve a type I customer if there are any and none of type II waiting.

The service times depend only on the type of customer, not the type of server. Service times for type I have a different distribution than type II.

Formulate an Event Graph model for this situation (1) Not passing parameters; (2) Using parameters on edges and arguments on events.