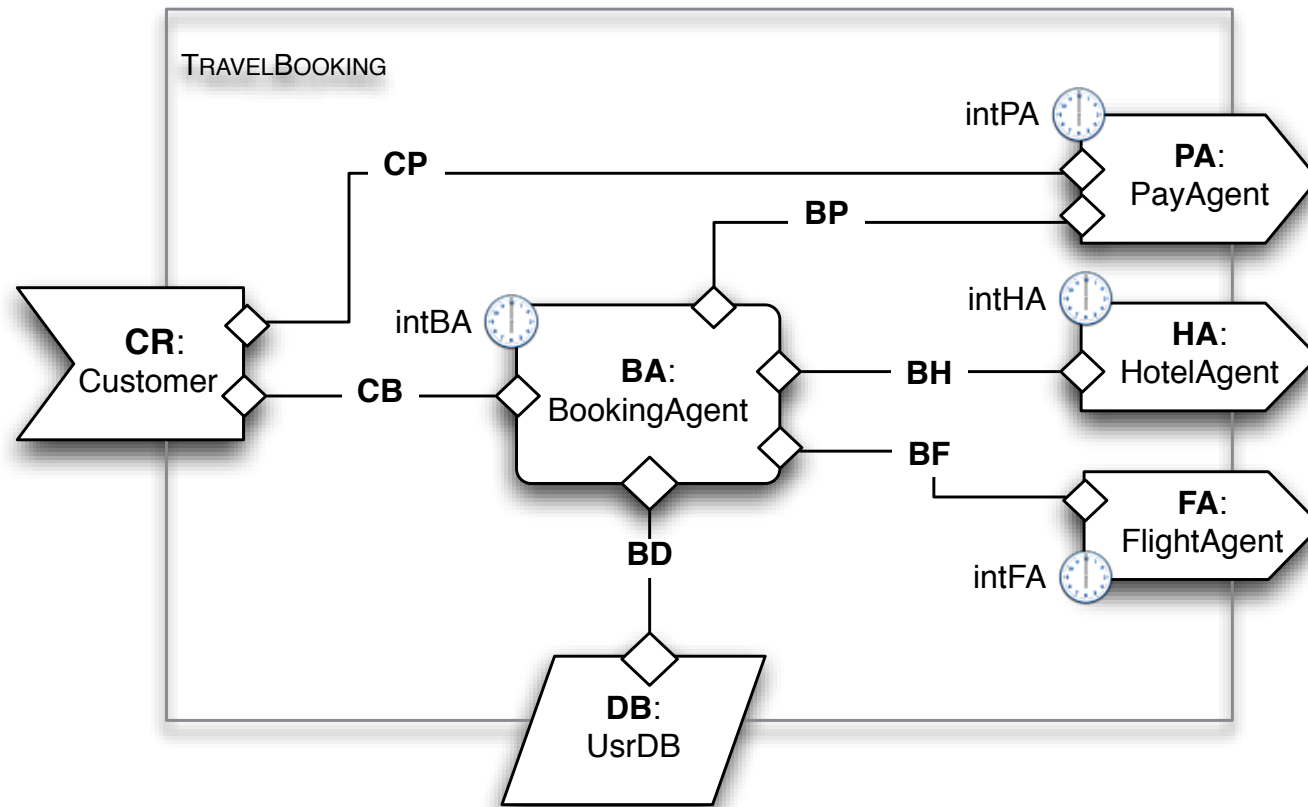


SRML

exercise3: the specifications

The Orchestration of Travel Booking



Complete the following business protocol...

BUSINESS PROTOCOL PayAgent is

INTERACTIONS

INTERACTIONS

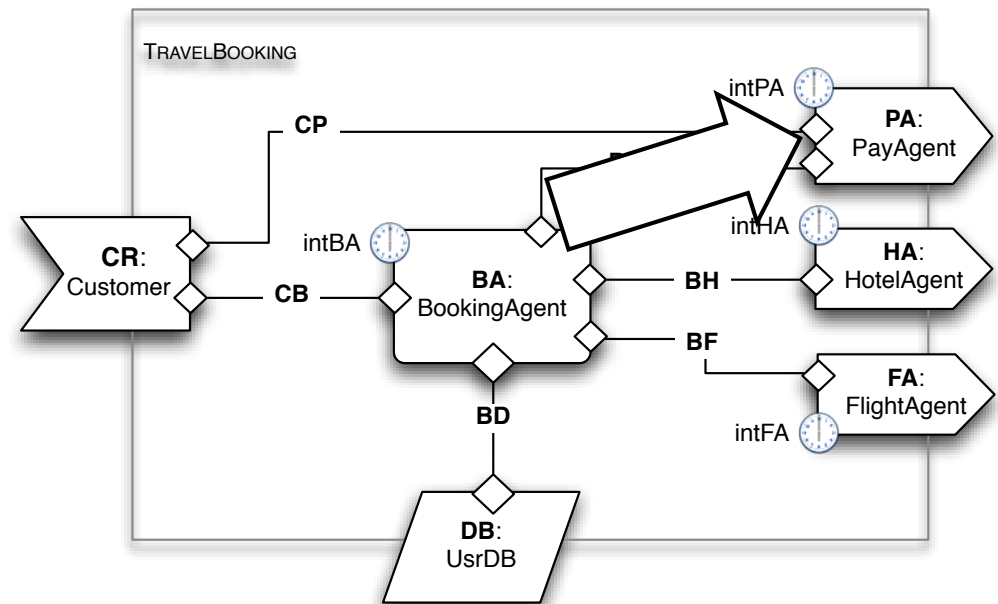
r&s payment

🔔 amount:moneyvalue
beneficiary:usrdata
originator:usrdata
cardNo:paydata

✉ proof:pcode

snd payNotify

🔔 status:bool



🕒 Define the following properties for PayAgent:

- 🕒 in the initial state the pay agent is ready to engage in the initiation event of payment
- 🕒 the pay agent will eventually notify the customer (with the initiation event of payNotify) after replying to the booking agent with the reply event of payment

Solution

BUSINESS PROTOCOL PayAgent is

INTERACTIONS

r&s payment

amount:moneyvalue
beneficiary:usrdata
originator:usrdata
cardNo:paydata

proof:pcode

snd payNotify

status:bool

BEHAVIOUR

initiallyEnabled payment?

payment! **ensures** payNotify!

ONLY FOR CONVERSATIONAL INTERACTIONS

payment? **ensures** payment!

payment! $\wedge$ payment.Reply **enables** paymentx?
until payment✓? or payment.UseBy $\geq$ now

payment! $\wedge$ payment.Reply **enables** payment✓?
until paymentx? or payment.UseBy $\geq$ now

payment✓? **enables** payment+

What are the properties guaranteed by the computational model?

Complete the following business protocol...

BUSINESS PROTOCOL HotelAgent **is**

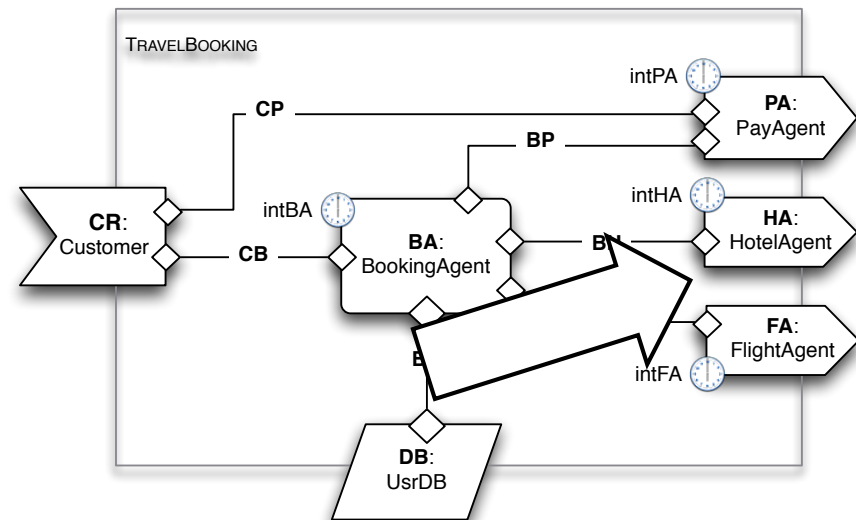
INTERACTIONS

r&s lockHotel

🔔 checkin,checkout:date

name:usrdata

✉ hconf:hcode



🕒 Define the following properties for HotelAgent

- 🕒 in the initial state the hotel agent is ready to engage in the initiation event of lockHotel
- 🕒 once the confirmation-event of lockHotel is received, a revoke event for lockHotel is possible before the date of arrival (represented by the parameter checkin of lockHotel)

Solution

BUSINESS PROTOCOL HotelAgent **is**

INTERACTIONS

r&s lockHotel

🔔 checkin,checkout:date

name:usrdata

✉ hconf:hcode

BEHAVIOUR

initiallyEnabled lockHotel🔔?

lockHotel✓? **enables** lockHotel†? **until** today≥lockHotel.checkin

Complete the following business protocol...

BUSINESS PROTOCOL FlightAgent is

INTERACTIONS

r&s lockFlight

🔔 from,to:airport,
out,in:date,
traveller:usrData

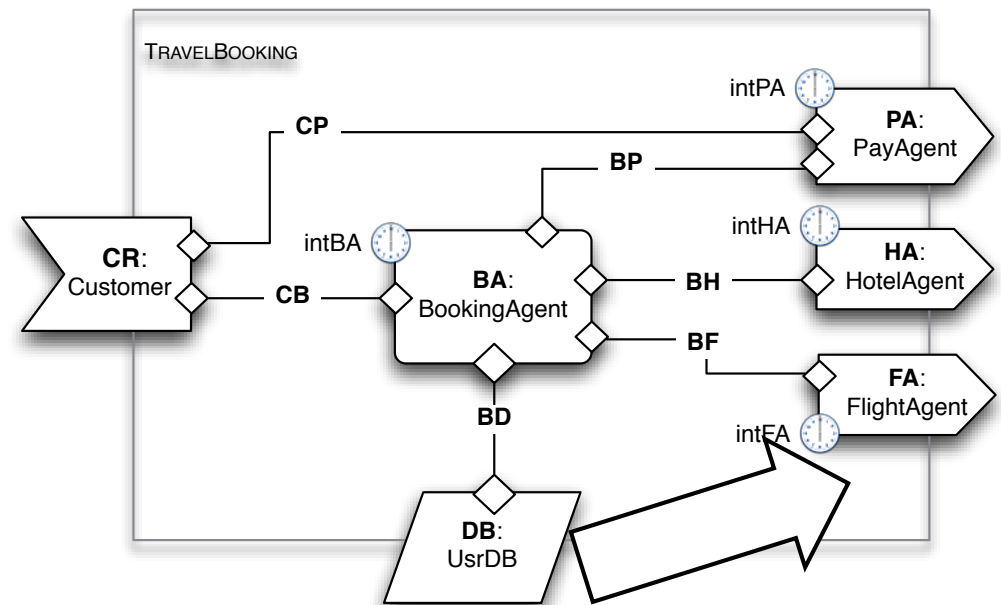
✉ fconf:fcode,
hconf:hcode,
amount:moneyValue,
beneficiary:accountNo,
payService:serviceId

rcv payAck

🔔 proof:pcode
status:boolean

snd payRefund

🔔 amount:moneyVal



Solution

BUSINESS PROTOCOL FlightAgent is  FlightAgent

INTERACTIONS

r&s lockFlight

 from,to:airport,
out,in:date,
traveller:usrData
 fconf:fcode,
hconf:hcode,
amount:moneyValue,
beneficiary:accountNo,
payService:serviceId

rcv payAck

 proof:pcode
status:boolean

snd payRefund

 amount:moneyVal

-  in the initial state the flight agent is ready to engage in the initiation event of lockFlight
-  the receive event of PayAck will be (for sure!) executed after and only after the occurrence of the reply event of lockFlight with positive reply
-  the revoke of lockFlight will be accepted after and only after the send of payAck with positive status if today is earlier than 7 days (7th day included) before the date of parameter lockFlight.out
-  the initiation event of payRefund will occur upon but not before receiving the commit of lockFlight

Business Protocols & Behaviour

BUSINESS PROTOCOL FlightAgent is

INTERACTIONS

r&s lockFlight

🔔 from,to:airport,
out,in:date,
traveller:usrData

✉ fconf:fcode,
hconf:hcode,
amount:moneyValue,
beneficiary:accountNo,
payService:serviceId

rcv payAck

🔔 proof:pcode
status:boolean

snd payRefund

🔔 amount:moneyVal

BEHAVIOUR

initiallyEnabled lockFlight🔔?

lockFlight✉! $\wedge$ lockFlight.Reply **enables** payAck🔔?

payAck🔔? $\wedge$ payAck.status **enables** lockFlight†? **until** lockFlight.out $\geq$ today+7

lockFlight†? **ensures** payRefund🔔!

lockFlight†? $\wedge$ lockFlight.out<today+7 **ensures** payRefund🔔!

Business Protocols & Behaviour

BUSINESS PROTOCOL FlightAgent is

INTERACTIONS

r&s lockFlight

🔔 from,to:airport,
out,in:date,
traveller:usrData

✉ fconf:fcode,
hconf:hcode,
amount:moneyValue,
beneficiary:accountNo,
payService:serviceId

rcv payAck

🔔 proof:pcode
status:boolean

snd payRefund

🔔 amount:moneyVal

BEHAVIOUR...

Is the following property guaranteed
by the computational model?

🔔 payAck🔔? ensures payAck✉!

NO!