```
role IssuingBank   {   const SKip,SKpi,Kcib:SessionKey;
read_4(Cust,IssuingBank, {{( POIc,Amtc,IDc,TIDc,TSc,IDwd,Nwd,TIDwd,POIwd,TSwd,
{PI}Kcib}}prk(Cust)}puk(IssuingBank));
     send_5(IssuingBank,PaymentGateway,{H1(SKip),
(TIDc,POIc,Amtc,IDwd,IDc,Nib,TSib),TIDc,POIc,Amtc,IDwd,IDc,Nib,TSib}SKip);
     read_9(PaymentGateway,IssuingBank,{H3(SKpi),
(TIDc,Amtc,Idc,Idm,SMS),TIDc,Amtc,Idc,Idm,SMS}SKpi);
send_10(IssuingBank,Cust,
{{TIDc,Amtc,IDc,IDwd,IDm,SMS}prk(IssuingBank)}puk(Cust));
     claim_IssuingBank1(IssuingBank,Secret, SKpi);
     claim_IssuingBank2(IssuingBank,Secret, SKip);
     claim_IB3(IssuingBank,Secret, PI);
     claim_IssuingBank4(IssuingBank,Secret, POIc);
     claim_IssuingBank5(IssuingBank,Niagree);
     claim_IssuingBank6(IssuingBank,Nisynch);     }
role PaymentGateway   {const SKap,SKpa,Kmab,SKip,SKpi:SessionKey;
     read_5(IssuingBank,PaymentGateway,{H1(SKip),
(TIDc,POIc,Amtc,IDwd,IDc,Nib,TSib),TIDc,POIc,Amtc,IDwd,IDc,Nib,TSib}SKip);
send_6(PaymentGateway,AcquiringBank,{H2(SKpa),
(TIDc,POIc,Amtc,IDwd,IDc,TSib)}SKpa);
read_7(AcquiringBank,PaymentGateway,{TIDm,Amtm,IDm,IDc,IDwd,
{PI}Kmab,SMS}SKap);
send_9(PaymentGateway,IssuingBank,{H3(SKpi),
(TIDc,Amtc,IDc,IDm,SMS),TIDc,Amtc,IDc,IDm,SMS}SKpi);
     claim_PaymentGateway1(PaymentGateway,Secret, SKpi);
     claim_PaymentGateway2(PaymentGateway,Secret,SKap);
     claim_PaymentGateway3(PaymentGateway,Secret,SKpa);
     claim_PaymentGateway4(PaymentGateway,Secret, PI);
     claim_PaymentGateway5(PaymentGateway,Niagree);
     claim_PaymentGateway6(PaymentGateway,Nisynch);                    }
role AcquiringBank   {   const SKap,SKgi,SKpa,Kmab,Kcib,SKip:SessionKey;
     read_6(PaymentGateway,AcquiringBank,{H2(SKpa),
(TIDc,POIc,Amtc,IDwd,IDc,TSib)}SKpa);
     send_7(AcquiringBank,PaymentGateway,{TIDm,Amtm,Idm,Idc,Idwd,
{PI}Kmab,SMS}SKap);   send_8(AcquiringBank,Merchant,
{{{PI}Kmab,SMS}prk(AcquiringBank)}puk(Merchant));
     claim_AcquiringBank1(AcquiringBank,Secret, POIc);
     claim_AcquiringBank2(AcquiringBank,Secret, SKpa);
     claim_AcquiringBank3(AcquiringBank,Secret, PI);
     claim_AcquiringBank4(AcquiringBank,Niagree);
     claim_AcquiringBank5(AcquiringBank,Nisynch);                 }
role Merchant      {  const SKap,SKgi,Kmab,SKip,Kcib:SessionKey;
 read_8(AcquiringBank,Merchant,{{{PI}Kmab,SMS}prk(AcquiringBank)}puk(Merchant));
     claim_Merchant1(Merchant,Secret, prk(AcquiringBank));
     claim_Merchant2(Merchant,Secret, PI);
     claim_Merchant3(Merchant,Niagree);
     claim_Merchant4(Merchant,Nisynch);                           }         }
```