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-- Mobile CSP
-- Abeer Al-Humaimedy, 2014
-- This code introduces mobility into CSP by sending names as data in channels.

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-- Our code
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--channels and data defentions
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datatype Marks = plus | minus -- | non

channel chUpdate: Marks.Mobch

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-- processes
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reg(A) = ([| x:{| y | y<-diff(diff(Events,A),{|chUpdate|}) |} @ x -> reg(A) ) [|
      (chUpdate?dir?x ->
        if (dir==plus) then reg(union(A,{|ch(x)|})) else (if (dir==minus)
then reg(diff(A,{|ch(x)|}))
                                else reg(A)) )
      --
      [| SKIP

parmob(p,q)= (p [| diff(Events,{|chUpdate|}) |] q)

Mobile(p,A)= (reg(A) [| {|chUpdate|} |] p) \{|chUpdate|}

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-- 1. Parchsing senario
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channel buy,price, product: {1..3}
channel acceptPrice, rejectPrice, enquiryPrice
channel COM,connect,release: Mobch
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--define mobile channels
channel mproduct

Mobch={|mproduct|} -- aliases for mobile channel

ch(mproduct)= product

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buyer= buy!2 -> price?p ->( (acceptPrice -> connect!mproduct ->
chUpdate!plus!mproduct -> product?d
      -> release.mproduct -> chUpdate!minus!mproduct -> buyer )
|~| (rejectPrice -> buyer ) )

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nmbuyer= buy!2 -> price?p ->( (acceptPrice -> product?d -> nmbuyer )
    |~| (rejectPrice -> nmbuyer ) )
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```
seller= buy?prod -> enquiryPrice -> price!2 ->( (acceptPrice -> connect?x ->
chUpdate!plus!x -> COM!x
    -> chUpdate!plus!x -> ch(x)?y -> release.x -> chUpdate!minus!x ->
seller )
    [] (rejectPrice -> seller) )
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```
nmseller= buy?prod -> enquiryPrice -> price!2 ->( (acceptPrice -> product?y ->
nmseller )
    [] (rejectPrice -> nmseller) )
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shipper= COM?x -> chUpdate!plus!x -> ch(x)!1 -> release.x -> chUpdate!minus!x ->
shipper
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nmshipper= product!1 -> nmshipper
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system = parmob(parmob(Mobile(shipper, {|release,COM|}),
    Mobile(seller, {|
buy,price,acceptPrice,rejectPrice,connect,release,COM |})),
    Mobile(buyer, {|
buy,price,acceptPrice,rejectPrice,connect,release |} )
```

```
nomobilesys = (nmshipper [|{|product|}] nmseller ) [|{|
buy,price,acceptPrice,rejectPrice,product |}] nmbuyer
```

```
assert (system \{|connect,release,COM|}) [T= nomobilesys
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